



DEPARTMENT OF THE ARMY  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 17300  
FORT WORTH, TX 76102-0300

13 July 2024

**REQUEST FOR STATEMENT OF INTEREST  
W9126G-24-2-SOI-3579**

*Applicants must be a member in one of the following Cooperative Ecosystem Studies Units:  
Gulf Coast / South Florida-Caribbean / Piedmont-South Atlantic Coast CESU Regions*

**Project Title:** Ecosystem Management Technical Assistance to Promote Carbon Sequestration, Navy Region Southeast

A cooperative agreement is being offered ONLY to members of the Cooperative Ecosystem Studies Units (CESU) Program Region(s) identified above. Award will be made upon mutual agreement and acceptance of the terms and conditions contained in the request for proposal and the of the recipient's CESU Master Agreement. Note the established CESU Program indirect rate is 17.5%.

Responses to this Request for Statements of Interest will be used to identify potential organizations for this project. Approximately **\$1,008,700** is expected to be available to support this project for the **base period**. Additional funding may be available to the successful recipient for optional tasks and/or follow on work in subsequent years.

**NOTE:** This project will be awarded under the authority of 10 USC 670c-1, **Sikes Act**. For projects for the implementation and enforcement of integrated natural resources management plans, priority shall be given to award to Federal and State agencies having responsibility for the conservation or management of fish or wildlife.

**Period of Performance.** The base period of agreement will extend 24 months from date of award. There may be up to four 12-month follow-on periods based on availability of funding.

**Description of Anticipated Work:** See attached Statement of Objectives

**NOTE:** At this time we are only requesting that you demonstrate available qualifications and capability for performing similar or same type of work by submitting a Statement of Interest. A full proposal and budget are NOT requested at this time.

**Preparation of your Statement of Interest:** Provide the following (Maximum length: 2 pages, single-spaced, 12 pt. font):

1. Name, Organization, Cage Code, Unique Entity ID, and Contact Information (Email)
2. Brief Statement of Qualifications (including):
  - a. Biographical sketch of the Principal Investigator, to include specific experience and capabilities in areas related to this project's requirements
  - b. Relevant past projects and clients with brief descriptions of these projects

- c. Staff, faculty or students available to work on this project and their areas of expertise
- d. Brief description of other capabilities to successfully complete the project: (e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.)

**Submission of Your Statement of Interest**

- 1. Statements of Interest are due by **12:00 P.M., Central Time, on 15 August 2024.**  
Submit your Statement of Interest via e-mail attachments or direct questions to:

Sandy Justman  
Grants Specialist  
USACE, Fort Worth District  
Email: [sandra.justman@usace.army.mil](mailto:sandra.justman@usace.army.mil)  
Office: 817-886-1073

Kathy S. Mitchell  
Project Manager  
USACE, Fort Worth District  
Email: [kathy.s.mitchell@usace.army.mil](mailto:kathy.s.mitchell@usace.army.mil)  
Office: 817-886-1709

**Review of Statements Received:** All statements of interest received from a member of the CESU Region(s) identified above will be evaluated by a board comprised of one or more people at the receiving installation or activity, who will determine which statement(s) best meet the program objectives: offer the most highly qualified Principal Investigator, have the most relevant experience and the highest capability to successfully meet the program objectives. Submitters whose statements are determined to best meet the program objectives will be invited to submit a full proposal.

**Timeline for Review of Statements of Interest:** RSOI's are required to be posted on [www.Grants.gov](http://www.Grants.gov) for 30 days prior to the Government making a decision and requesting full proposals.

Thank you for your interest in our Cooperative Agreements Program.

*Paige E. Poorman*

PAIGE E. POORMAN  
Grants Officer

Attachment: Statement of Objectives

## STATEMENT OF OBJECTIVES

Provide Ecosystem Management Technical Assistance to Promote Carbon Sequestration at Naval Air Stations Whiting Field, Pensacola, Panama City, and Meridian

### A. Background and Introduction

The purpose of this project is to support the implementation of the Integrated Natural Resources Management Plans (INRMPs) at Naval Air Station Whiting Field (NASWF), Naval Air Station Pensacola (NASP), Naval Support Activity Panama City (NSAPC), Florida, and Naval Air Station Meridian (NASM), Mississippi, by increasing the climate resiliency of 312.5 cumulative acres across these four installations.

Climate resilience refers to the capacity of an ecosystem to withstand and recover from the impacts of climate change. The targeted acres at NASWF, NASP, NSAPC, and NASM are in various condition states varying from a previously cleared and unkempt weedy state, to storm damaged, or cut over. This leads to various issues related to climate change. First, these acres are more susceptible to erosion because they lack the vegetation cover to properly stabilize soil during heavy rainfall, potentially leading to soil degradation and loss of fertile topsoil. Secondly, while well-maintained green spaces and forested areas can sequester carbon dioxide from the atmosphere, weedy and unkempt land does not contribute to carbon sequestration and may even release carbon when disturbed or burned. Neglected land also may not support a diverse range of plant and animal species, leading to a loss of biodiversity. This can have cascading effects on ecosystems and reduce the resilience of local wildlife. Further, unkempt parcels with minimal vegetation can contribute to the urban heat island effect, where temperatures are significantly higher than in surrounding areas. Dry, weedy vegetation can also become a fire hazard, especially in regions prone to wildfires. Neglected land can serve as potential fuel, posing a risk to nearby communities and infrastructure.

To enhance climate resilience and mitigate these risks, it is essential to manage and maintain land in ways that promote sustainable land use, vegetation cover, and ecosystem health. As part of this project, this involves reforestation efforts, implementing sustainable landscaping practices, and converting some of the land into a pollinator garden and gopher tortoise receiving area to maximize its environmental and social benefits.

A) Acreages to be addressed at NASWF include the following:

- a cleared 18-acre parcel near the main gate that will be enhanced to serve as a gopher tortoise receiving area and pollinator garden (Figure 1), and
- six previously-cleared parcels totaling 90.5 cumulative acres that are to be site prepped and reforested with longleaf pine trees (Figure 1).

- B) Six parcels at NASP, totaling 49 acres, are to be site prepped and reforested with longleaf pine (Figure 2).
- C) Four parcels totaling 34.7 acres on the northwestern corner and south end of NSAPC is to be mechanically site prepared and planted to longleaf pine (Figure 3).
- D) Eight parcels totaling 116 acres at NASM. Fifty (50) acres are to be reforested to loblolly pine and 66 acres reforested to longleaf pine (Figure 4).

The INRMPs for NASWF, NASP, NSAPC, and NASM require that these lands be managed within an ecosystem context while providing optimal landscape benefits for realistic military training, as do the Legal Drivers listed below. This project will support the improvement of ecosystem management through invasive plant species control, ecosystem restoration with native plant species, and land management techniques that will help sequester carbon in the soil and root systems, ultimately contributing to the Department of Defense (DoD) goal to offset greenhouse gasses that cause climate change.

**B. Authority**

The authority for entering into a cooperative agreement for this effort will be Section 670c-1, Title 16 United States Code, Sikes Act and activities performed by the recipient must be completed in a manner that is conducive to the guidelines of the regulatory mandates shown below.

Examples of carrying out a public purpose may include, but are not limited to, the following:

- Project results are made available to a wide audience (including nonfederal entities)
- Project results/outputs add to the scientific literature/knowledge base, with applicability and utility beyond the scope of the project footprint/study area
- Academic and other nonfederal partner institutions (and their personnel) gain professional experience, increase knowledge, and develop skills and abilities
- Students benefit from direct interaction with federal scientists, program and technical staff, and field unit managers

**Legal Drivers Addressed by this Project**

Name/Description	Citation
Coastal Zone Management Act	16 U.S.C. 1456
Endangered Species Act	16 U.S.C. 1531 & 1536
Erosion Protection Act	33 U.S.C. 426
Federal Insecticide, Fungicide, and Rodenticide Act	7 U.S.C. 136
Federal Land Policy and Management Act of 1976	43 U.S.C. 1701
Federal Leadership in Environmental, Energy, and Economic	Executive Order 13514

### Legal Drivers Addressed by this Project

Name/Description	Citation
Performance	
Federal Noxious Weed Act of 1974	7 U.S.C. 2801
Federal Pest Plant Act	7 U.S.C. 150
Fish and Wildlife Conservation Act	16 U.S.C. 2901
Fish and Wildlife Coordination Act, as amended	16 U.S.C. 661-666c
Floodplain Management	Executive Order 11988
Greening the Government through Environmental Management	Executive Order 13148
Invasive Species	Executive Order 13751
Management of Undesirable Plants of Federal Lands	7 U.S.C. 2814
Protection and Enhancement of Environmental Quality	Executive Order 11514
Sikes Act Improvement Act of 1997	16 U.S.C. 670

In general, cooperative agreements must carry out a public purpose of support or stimulation, however under the authority of the Sikes Act (16 USC 670c-1 (c) (2)), notwithstanding chapter 63 of Title 31 (31 U.S.C. § 6301 et seq), a cooperative agreement under this section may be used to acquire property or services for the direct benefit or use of the United States Government.

In accordance with section 6305 – *Using cooperative agreements of the Federal Grant and Cooperative Agreements Act of 1977* (31 U.S.C. § 6301 et seq.), substantial involvement is expected between the Department of Defense and the recipient when carrying out the activity contemplated by the cooperative agreement. The DoD agrees to participate at a national level in support of the CESU program as accepted in the Master MOU for the establishment and continuation of the CESU program Article II 1-4 and Article VI 1-7.

The installation further (hence DoD) agrees to provide substantial involvement as directed under the appropriate master agreement to include, but not limited to, the following:

- NAVFAC Southeast & Regional Navy Installations are involved in development of study methodology, data gathering, analysis, and/or report writing
- NAVFAC Southeast & Regional Navy Installations actively participates and collaborates in carrying out the project plan of work, reviews and approves activities, helps train or select project staff or trainees
- NAVFAC Southeast & Regional Navy Installations incurs in-kind or direct expenditures in carrying out the activities specified in the project agreement. Examples include, but are not limited to, the following: (Choose what applies must have at least 2 and you can add others that apply)
  - Providing computing services
  - Providing staff time to work on the project



NAS Whiting Field Longleaf Reforestation and Pollinator Garden

SYMBOL KEY	
	Pollinator Garden 18 ac
	Longleaf Reforestation 21 ac
	Longleaf Reforestation 33.5 ac
	Longleaf Reforestation 18 ac
	Longleaf Reforestation 4 ac
	Override 1
	Longleaf Reforestation 9 ac
	Override 2
	Longleaf Reforestation 5 ac
	Installation
<p>Longleaf Reforestation 90.5 ac      Pollinator Garden 18 ac</p>	

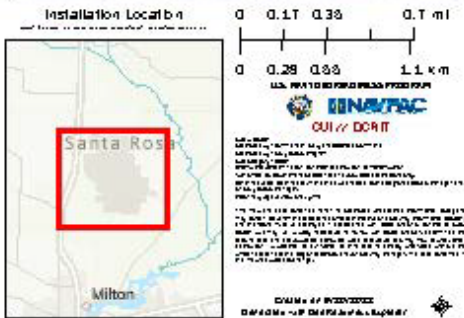


Figure 1. Locations of the seven total parcels to be addressed at NAS Whiting Field, FL.



**Figure 2. Locations of the six parcels to be addressed at NAS Pensacola, FL.**

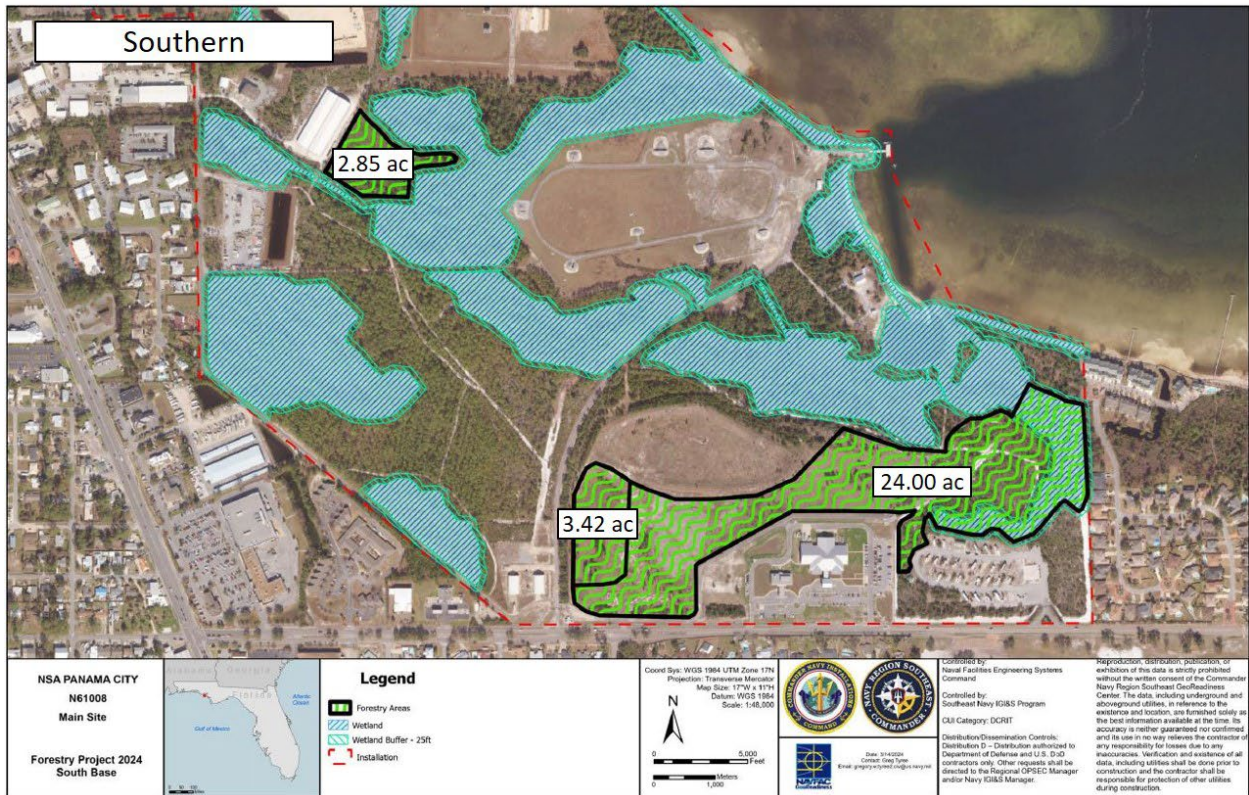
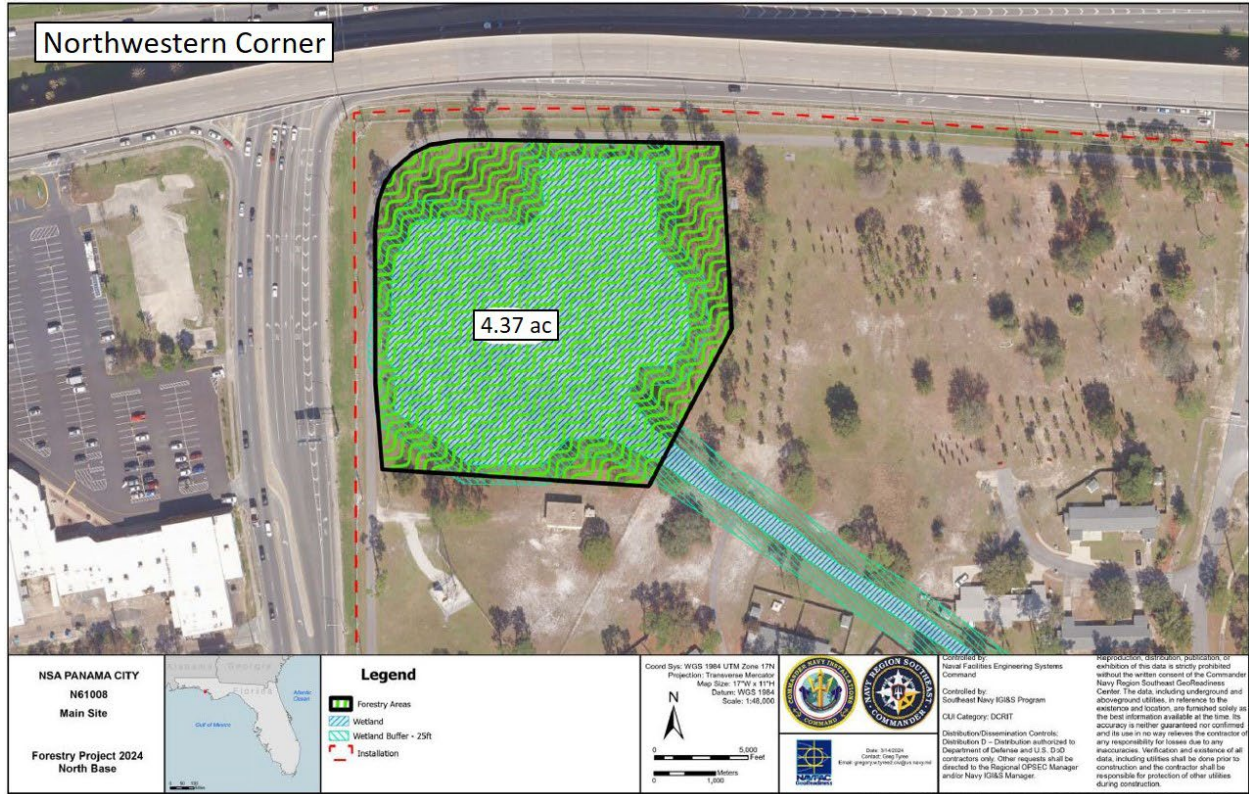


Figure 3. Locations of the parcels to be addressed at NSA Panama City, FL.

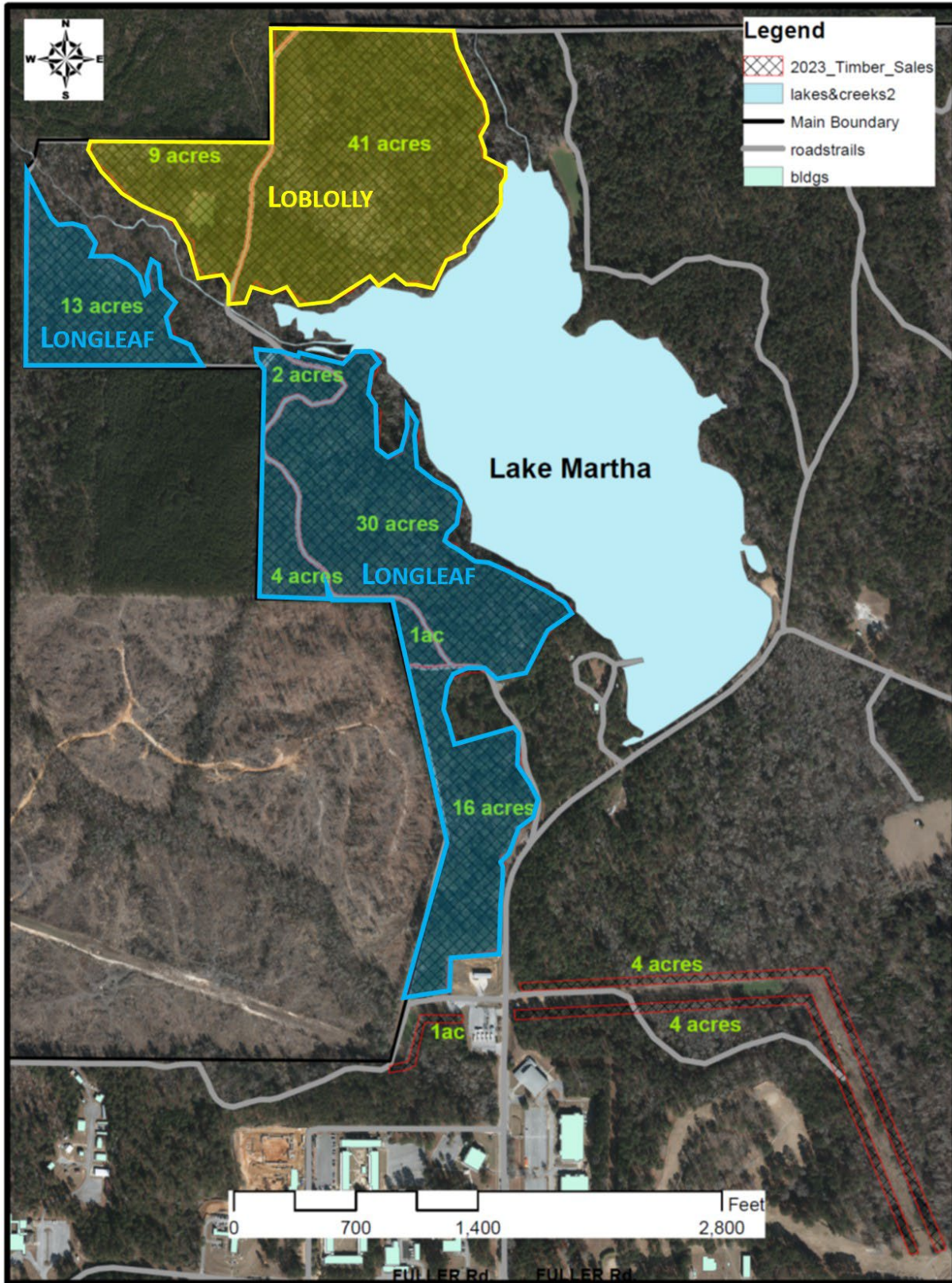


Figure 4. Locations of the parcels to be addressed at NAS Meridian, MS.

## **C. Objective**

The Cooperator shall be responsible for providing technical and scientific research assistance to the NAVFAC Southeast and installation staff in order to implement the tasks described in Section C (Services Requested) of this project and future work associated with the future-year Optional Tasks described in Appendix 1, which shall be dependent on the availability of funds. A primary objective of the project is to promote carbon sequestration through storage of carbon in native vegetation (above and below ground) as well as in the soil.

## **D. Services Requested**

The requested services are broken down into four major Tasks, one for each of the four installations. Each Task has six subtasks, identified by the letters a, b, c, d, e, and f.

### **Task 1. THE NAS WHITING FIELD TASK, 18-ACRE POLLINATOR GARDEN AND 90.5 ACRES OF LONGLEAF PINE**

#### **1a. *Kickoff Meeting at NASWF***

The Cooperator shall attend a kickoff meeting with NAVFAC Southeast and installation staff at NASWF to visit the project sites, discuss logistics and base access, and address any other questions and details as necessary. Following the meeting, the Cooperator shall submit meeting minutes within five workdays to the Navy Technical Representative (NTR) and NASWF Natural Resources Manager (NRM).

#### **1b. *Vegetation Management and Monitoring Plan for NASWF***

The Cooperator shall develop a Vegetation Management and Monitoring Plan (VMMP) for:

- (1) an effective gopher tortoise receiving area and pollinator garden on 18 acres near the main gate of NASWF (Figure 1), and
- (2) longleaf pine reforestation on 90.5 acres across six parcels at NASWF (Figure 1).

A primary objective of the project is to promote carbon sequestration through planting and reforestation with native species. Therefore, the Cooperator shall identify the best methods and metrics to measure baseline conditions and monitor progress toward the goal of carbon sequestration at the NASWF sites and include this information in the VMMP.

The Cooperator shall develop a scientifically defensible and statistically rigorous plan to measure and monitor the vegetation community (e.g., invasive control and restoration success) and soil health (e.g., soil bulk density [core method], soil texture, and soil organic carbon [SOC]) before and after vegetation restoration. At a minimum, the plan shall identify and justify specific metrics and techniques for monitoring vegetation and soil, and will propose a detailed sampling plan (e.g., the number of samples) and

schedule. The plan shall include taking geo-referenced photographs at sample sites to document site conditions over time.

NAVFAC Southeast shall ensure that vegetative treatment methods and plantings proposed in the VMMP are coordinated with NASWF staff to gain all necessary installation approvals.

#### **1c. *Pre-Treatment Monitoring at NASWF***

The Cooperator shall assist Navy staff to conduct baseline, pre-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 1b). This will provide a basis of comparison with the post-treatment monitoring data. A summary of pre-treatment information shall be provided in the next available progress report.

The Cooperator shall collect geospatial information and maintain a GIS geodatabase of the location/extent, type, and date of each treatment. The Cooperator shall collect and deliver GIS data in accordance with the most current NAVFAC SEGRC Data Delivery and Maintenance Standards (Appendix 2).

#### **1d. *Planting Preparation at NASWF***

The Cooperator shall work closely with Navy personnel to implement invasive species control measures in accordance with the VMMP (sub-task 1b). The Cooperator shall prepare sites for planting including prescribed fire, application of herbicides, and other suitable methods to reduce competition.

An approximately 18-acre area north of the main gate at NASWF was clear cut in 2019 to comply with airfield tree height restrictions. The remaining stumps were removed in 2021-22. Since then, various weeds have become established. The ground is primarily a mix of red clay and sandy soils. It shall be site prepped by removing non-native weeds via hand-pulling so that plants conducive to pollinator success and gopher tortoise forage may be planted.

The Cooperator shall site-prepare approximately 90.5 acres across six parcels at NASWF for subsequent planting with longleaf pine. The six parcels were cleared, and site prepped over a period of time between 2019 and 2020, but a combination of Covid-related delays and contractor administrative issues prevented planting with new trees. These areas will need to be site-prepped again, preferably with herbicide and site prep burns, prior to hand planting longleaf seedlings. All herbicide applications shall follow label and industry consensus product and safety standards. The Cooperator shall enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

#### **1e. *Vegetation Restoration at NASWF***

The Cooperator shall assist Navy staff to enhance and restore the selected areas in accordance with the VMMP (sub-task 1b). The Cooperator shall select, procure, and plant native pollinator and forage plant species in the 18 acres adjacent to the main gate on NASWF, and account for irrigation of new plantings based upon available

water sources. Should more than 10% of the planted individuals die within 12 months of planting, they shall be replaced at no additional cost to the Navy.

The plants requested for the 18-acre parcel include:

- a. 50 Brodie juniper (*Juniperus virginiana*) spaced evenly across the eastern edge of the 18-acre parcel,
- b. Plant an assortment of plants in the 18-acre receiving area that can serve as shade shrubs and gopher tortoise forage and facilitate pollinator survival and reproduction. They shall be planted at a time of year to maximize survivability and successful early growth. Note that an appropriate tiller will be necessary to break up the ground in places. Requested plantings include:
  1. Blueberry (*Vaccinium corymbosum*) of a highbush variety, 20 per acre across 4 acres (80 total plants),
    - a. Note that pH-reducing additives will be required for the soil around these plants.
    - b. Note that bagged watering devices should be placed at the base of each tree to help ensure their survival.
  2. Blackberry (*Rubus* spp.), 50 per acre across 4 acres (200 total plants),
  3. Milkweed (*Asclepias tuberosa*), 60 per acre across 5 acres (300 total plants).
- c. Irrigate the plantings twice a week for five weeks using a water-mounted UTV or similar vehicle, or by setting up a tank and drip line system, or some combination of both.

The Cooperator shall also hand-plant 90.5 acres across six parcels at NASWF with longleaf pine at a density of 650 tree seedlings per acre. This planting shall occur between November 1 and the following January 15 and be followed by early spring herbaceous weed control applications specifically developed to enhance longleaf pine seedling survival, no later than April 1. The Cooperator shall enter herbicide treatments into NOPRS.

#### **1f. Post-Treatment Monitoring and Reporting for NASWF**

The Cooperator shall assist Navy staff to conduct post-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 2a). At each parcel, the Cooperator shall collect and analyze samples to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC). Photo-documentation at sample sites shall be completed to document changes in site conditions. The Cooperator shall also note areas with poor cover or high planted tree mortality that may require additional management. A summary of post-treatment results shall be provided in the next available progress report. All results shall be included and discussed in the Final Report.

## **Task 2. THE NAS PENSACOLA TASK, 49 ACRES OF LONGLEAF PINE**

## **2a. Kickoff Meeting at NASP**

The Cooperator shall attend a kickoff meeting with NAVFAC Southeast and installation staff at NASP to visit the project sites, discuss logistics and base access, and address any other questions and details as necessary. Following the meeting, the Cooperator shall submit meeting minutes within five workdays to the NTR and NASP NRM.

## **2b. Vegetation Management and Monitoring Plan for NASP**

The Cooperator shall develop a VMMP for longleaf pine reforestation on 49 acres across six parcels at NASP (Figure 2).

A primary objective of the project is to promote carbon sequestration through planting and reforestation with native species. Therefore, the Cooperator shall research to identify the best methods and metrics to measure baseline conditions and monitor progress toward the goal of carbon sequestration at these sites, which shall be included in the VMMP.

The six parcels comprising 49 acres at NASP are also largely cleared. There are some scattered live oaks (>14" dbh) that will be retained. These parcels will require herbicide site prep prior to hand planting longleaf seedlings.

The Cooperator shall develop a scientifically defensible and statistically rigorous plan to measure and monitor the vegetation community (e.g., invasive control and restoration success) and soil health (e.g., soil bulk density [core method], soil texture, and soil organic carbon [SOC]) before and after vegetation restoration. At a minimum, the plan will identify and justify specific metrics and techniques for monitoring vegetation and soil, and will propose a detailed sampling plan (e.g., the number of samples) and schedule. The plan should include taking geo-referenced photographs at sample sites to document site conditions over time.

NAVFAC Southeast shall ensure that vegetative treatment methods and plantings proposed in the VMMP are coordinated with NASP staff to gain all necessary installation approvals.

## **2c. Pre-Treatment Monitoring at NASP**

The Cooperator shall assist Navy staff to conduct baseline, pre-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 2b). This will provide a basis of comparison with the post-treatment monitoring data. A summary of pre-treatment information shall be provided in the next available progress report.

The Cooperator shall collect geospatial information and maintain a GIS geodatabase of the location/extent, type, and date of each treatment. The Cooperator shall collect and deliver GIS data in accordance with the most current NAVFAC SEGRC Data Delivery and Maintenance Standards (Appendix 2).

#### **2d. *Planting Preparation at NASP***

The Cooperator shall work closely with Navy staff to implement invasive and competing species control measures in accordance with the VMMP (sub-task 2b). The Cooperator shall prepare sites for planting which may include application of herbicides or other suitable methods to reduce competition from residual hardwood saplings and wildling pine on the site. All herbicide applications shall follow label and industry consensus product and safety standards. The use of prescribed burning on NASP is logistically difficult and should not be considered a viable option at this property.

The Cooperator shall enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

#### **2e. *Vegetation Restoration at NASP***

The Cooperator shall hand-plant 49 acres across six parcels at NASP with longleaf pine at a density of 650 seedlings per acre. This planting shall occur between November 1 and January 15 and be followed by early spring herbaceous weed control applications specifically developed to enhance longleaf pine seedling survival, no later than April 15. The Cooperator shall enter herbicide treatments into NOPRS.

#### **2f. *Post-Treatment Monitoring and Reporting for NASP***

The Cooperator shall assist Navy personnel to conduct post-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 2b). At each parcel, the Cooperator shall collect and analyze samples to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC). Photo-documentation at sample sites shall be completed to document changes in site conditions. The Cooperator shall also note areas with poor cover or high planted tree mortality that may require additional management. A summary of post-treatment results shall be provided in the next available progress report. All results shall be included and discussed in the Final Report.

### **Task 3. THE NSA PANAMA CITY TASK, 34.7 ACRES OF LONGLEAF PINE**

#### **3a. *Kickoff Meeting at NSAPC***

The Cooperator shall attend a kickoff meeting with NAVFAC Southeast and installation staff at NSAPC to visit the project sites, discuss logistics and base access, and address any other questions and details as necessary. Following the meeting, the Cooperator shall submit meeting minutes within five workdays to the NTR and NSAPC NRM.

#### **3b. *Vegetation Management and Monitoring Plan for NSAPC***

The Cooperator shall develop a VMMP for longleaf pine reforestation on 34.7 acres

across four (4) parcels at NSAPC (Figure 3).

A primary objective of the project is to promote carbon sequestration through planting and reforestation with native species. Therefore, the Cooperator shall research to identify the best methods and metrics to measure baseline conditions and monitor progress toward the goal of carbon sequestration at these sites, which shall be included in the VMMP.

Four parcels comprising 34.7 acres at NSAPC is uncleared and will require mechanical site prep consisting of “shearing, raking, and piling”. These parcels will not require prescribed burning prior to hand planting longleaf seedlings due to smoke management challenges.

The Cooperator shall develop a scientifically defensible and statistically rigorous plan to measure and monitor the vegetation community (e.g., invasive control and restoration success) and soil health (e.g., soil bulk density [core method], soil texture, and soil organic carbon [SOC]) before and after vegetation restoration. At a minimum, the plan will identify and justify specific metrics and techniques for monitoring vegetation and soil, and will propose a detailed sampling plan (e.g., the number of samples) and schedule. The plan should include taking geo-referenced photographs at sample sites to document site conditions over time.

NAVFAC Southeast shall ensure that vegetative treatment methods and plantings proposed in the VMMP are coordinated with NSAPC staff to gain all necessary installation approvals.

### **3c. *Pre-Treatment Monitoring at NSAPC***

The Cooperator shall assist Navy staff to conduct baseline, pre-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 3b). This will provide a basis of comparison with the post-treatment monitoring data. A summary of pre-treatment information shall be provided in the next available progress report.

The Cooperator shall collect geospatial information and maintain a GIS geodatabase of the location/extent, type, and date of each treatment. The Cooperator shall collect and deliver GIS data in accordance with the most current NAVFAC SEGRC Data Delivery and Maintenance Standards (Appendix 2).

### **3d. *Planting Preparation at NSAPC***

The Cooperator shall work closely with Navy staff to implement invasive species control measures in accordance with the VMMP (sub-task 3b). The Cooperator shall prepare sites for planting which may include application of herbicides, mechanical site prep, or other suitable methods to reduce competition. All site preparation shall conform to industry consensus standards for the handling of herbicides, competition control, and completeness. The use of prescribed burning on NSAPC is logistically difficult and should not be considered a viable option at this property.

The Cooperator shall enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

**3e. *Vegetation Restoration at NSAPC***

The Cooperator shall hand-plant 34.7 acres at NSAPC with containerized longleaf pine at a density of 650 seedlings per acre. This planting shall occur between November 1st and the following January 15th followed by early spring herbaceous weed control applications specifically developed to enhance longleaf pine seedling survival, no later than April 15th. The Cooperator shall enter herbicide treatments into NOPRS.

**3f. *Post-Treatment Monitoring and Reporting for NSAPC***

The Cooperator shall assist Navy personnel to conduct post-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 3b). At each parcel, the Cooperator shall collect and analyze samples to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC). Photo-documentation at sample sites shall be completed to document changes in site conditions. The Cooperator shall also note areas with poor cover or high planted tree mortality that may require additional management. A summary of post-treatment results shall be provided in the next available progress report. All results shall be included and discussed in the Final Report.

**Task 4. THE NAS MERIDIAN TASK, 66 ACRES OF LONGLEAF PINE AND 50 ACRES LOBLOLLY PINE**

**4a. *Kickoff Meeting at NASM***

The Cooperator shall attend a kickoff meeting with NAVFAC Southeast and installation staff at NASM to visit the project sites, discuss logistics and base access, and address any other questions and details as necessary. Following the meeting, the Cooperator shall submit meeting minutes within five workdays to the NTR and NASM NRM.

**4b. *Vegetation Management and Monitoring Plan for NASM***

The Cooperator shall develop a VMMP for longleaf and loblolly pine reforestation on 116 total acres across 8 parcels at NASM (Figure 4).

A primary objective of the project is to promote carbon sequestration through planting and reforestation with native species. Therefore, the Cooperator shall research to identify the best methods and metrics to measure baseline conditions and monitor progress toward the goal of carbon sequestration at these sites, which shall be included in the VMMP.

The 8 parcels comprising 116 acres at NASM underwent a merchantable clear-cut during the fall of 2023. These parcels will require herbicide prep prior to hand planting longleaf and loblolly seedlings.

The Cooperator shall develop a scientifically defensible and statistically rigorous plan to measure and monitor the vegetation community (e.g., invasive control and restoration success) and soil health (e.g., soil bulk density [core method], soil texture, and soil organic carbon [SOC]) before and after vegetation restoration. At a minimum, the plan will identify and justify specific metrics and techniques for monitoring vegetation and soil, and will propose a detailed sampling plan (e.g., the number of samples) and schedule. The plan should include taking geo-referenced photographs at sample sites to document site conditions over time.

NAVFAC Southeast shall ensure that vegetative treatment methods and plantings proposed in the VMMP are coordinated with NASM staff to gain all necessary installation approvals.

#### **4c. *Pre-Treatment Monitoring at NASM***

The Cooperator shall assist Navy staff to conduct baseline, pre-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 4b). This will provide a basis of comparison with the post-treatment monitoring data. A summary of pre-treatment information shall be provided in the next available progress report.

The Cooperator shall collect geospatial information and maintain a GIS geodatabase of the location/extent, type, and date of each treatment. The Cooperator shall collect and deliver GIS data in accordance with the most current NAVFAC SEGRC Data Delivery and Maintenance Standards (Appendix 2).

#### **4d. *Planting Preparation at NASM***

The Cooperator shall work closely with Navy staff to implement invasive and competing species control measures in accordance with the VMMP (sub-task 4b). The Cooperator shall prepare sites for planting which may include application of herbicides or other suitable methods to reduce competition from residual hardwoods and wildling pine on the site. All herbicide applications shall follow label and industry consensus product and safety standards. The use of prescribed burning on NASM is logistically difficult and should not be considered a viable option at this property.

The Cooperator shall enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

#### **4e. *Vegetation Restoration at NASM***

The Cooperator shall hand-plant 66 acres across 6 parcels at NASM with containerized longleaf pine at a density of 650 seedlings per acre. This planting shall occur between November 1<sup>st</sup> and January 15<sup>th</sup> and be followed by early spring herbaceous weed control applications specifically developed to enhance longleaf pine seedling survival,

no later than April 15<sup>th</sup> following planting. Additionally the Cooperator shall hand-plant 50 acres across 2 parcels with bare root loblolly pine at a density of 650 seedlings per acre. This planting shall occur in between November 1st and or January 15th and be followed a few months later by early spring herbaceous weed control applications specifically developed to enhance loblolly pine seedling survival, no later than April 15th following planting. The Cooperator shall enter herbicide treatments into NOPRS.

#### **4f. Post-Treatment Monitoring and Reporting for NASM**

The Cooperator shall assist Navy personnel to conduct post-treatment monitoring in accordance with the methods and metrics outlined in the VMMP (sub-task 4b). At each parcel, the Cooperator shall collect and analyze samples to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC). Photo-documentation at sample sites shall be completed to document changes in site conditions. The Cooperator shall also note areas with poor cover or high planted tree mortality that may require additional management. A summary of post-treatment results shall be provided in the next available progress report. All results shall be included and discussed in the Final Report.

### **E. Role of NASWF, NASP, NSAPC, NASM, and other Government Personnel (Government)**

1. The natural resources managers (NRMs) at NASWF, NASP, NSAPC, and NASM shall coordinate site access for personnel working under this agreement in accordance with access coordination procedures and requirements at the respective installations.
2. The Government shall participate in the planning and implementation of each task described in the scope of work. The Government will prioritize tasks based on mission requirements.
3. Substantial Government involvement in all tasks listed above is expected. Government involvement shall include participation in field work and data collection for pre- and post- monitoring for carbon sequestration, during invasive control activities, and during site restoration activities. In addition, Government personnel shall provide project assistance and technical assistance/oversight, and coordinate safety planning for projects and provide a job hazard analysis for installation projects.
4. When available, the Government may allow access to informal conservation-related on-the-job training opportunities from subject matter experts.
5. The Government shall provide GIS data layers necessary to complete deliverables.

### **E. Role of the Cooperator**

1. The Cooperator shall furnish all materials, equipment, supplies, labor and services necessary to conduct the aforementioned technical assistance and restoration tasks.
2. The Cooperator shall equip their personnel with gear necessary to complete the tasks including, but not limited to, digital camera, soil sampling equipment, personal computers with necessary software / internet access, personal protective equipment, and transportation.
3. The Cooperator shall comply with all Occupational Safety and Health Administration (OSHA) requirements. To conduct all field activities safely in accordance with the approved safety plan, and to avoid damage to Government property. The Cooperator is liable for the safety of its personnel and representatives conducting work under this agreement.
4. The Cooperator shall coordinate each visit to NASWF, NASP, NSAPC, and NASM with the designated points of contact.
  - a. Visits to NASWF:
    - i. NASWF NRM: Christina Malitz, christina.l.malitz.civ@us.navy.mil, (850) 623-7602
    - ii. Navy Area Forester: Shawn Woodard, shawn.c.woodard2.civ@us.navy.mil, (850) 452-2057
  - b. Visits to NASP:
    - i. NASP NRM: Michael Hardy, michael.j.hardy24.civ@us.navy.mil, (850) 452-2070
    - ii. Navy Area Forester: Shawn Woodard, shawn.c.woodard2.civ@us.navy.mil, (850) 452-2057
  - c. Visits to NSAPC:
    - i. NSAPC NRM: Carrie Backlund, carrie.m.backlund.civ@us.navy.mil, (850) 235-5739
  - d. Visits to NASM:
    - i. NASM NRM: Jeff Mangrum, jeffrey.w.mangrum.civ@us.navy.mil, (601) 679-3539
    - ii. NASM Forester: Larry Conner, larry.a.conner5.civ@us.navy.mil, (601) 679-3135
5. The Cooperator shall coordinate and resolve technical issues related to the contract with the following points of contact.
  - a. NAVFAC SE NTR and Forester: Tim Money, timothy.h.money.civ@us.navy.mil, (334) 268-1807
  - b. NAVFAC SE Biologist: Jered Jackson, jered.b.jackson.civ@us.navy.mil, (904) 800-9006
  - c. NAVFAC SE Climate Resiliency Specialist: Arne Olsen, arne.e.olsen.civ@us.navy.mil, 904-947-6134

6. The Cooperator shall obtain all applicable permits and licensing in accordance with local, state, and Federal laws and regulations necessary to perform required tasks.

## **F. Period of Performance**

The period of performance for this agreement will be 24 months from the date of award (base award). This project will have four 12-month follow-on periods that will be exercised based on project conditions, project needs and available funds. For follow-on years, Appendix 1 contains scopes of work and associated deliverables for Optional Tasks 1 through 6, which can be executed under this agreement using future year funds, if available. The cost of Optional Tasks will be negotiated during the current base award. Award of Optional Tasks will be contingent on the availability of funds, project needs, and could be executed during the base award or at any other time prior to the end date of the agreement. It is expected that the Cooperator awarded the base award will be able to perform all Optional Tasks, if needed.

## **G. Points of Contact**

### **USACE**

Kathy Mitchell  
Environmental Agreements PM/Biologist  
USACE Regional Planning & Environmental Center  
(817) 886-1709

### **NAVFAC Navy Technical Representative & SE Climate Resiliency Subject Matter Expert**

Mr. Arne Olsen  
NAVFAC Southeast  
Environmental Division  
PO Box 30, Bldg 919  
NAS Jacksonville, FL 32212  
904-947-6134; [arne.e.olsen.civ@us.navy.mil](mailto:arne.e.olsen.civ@us.navy.mil)

### **NAVFAC Regional Forester**

Mr. Tim Money  
NAVFAC Southeast (EV22)  
REMOTE ADDRESS:  
1508 East County Road 36  
Ozark, AL 36360  
334-268-1807; [timothy.h.money.civ@us.navy.mil](mailto:timothy.h.money.civ@us.navy.mil)

### **NAVFAC Southeast Biologist**

Mr. Jered Jackson

NAVFAC Southeast (EV22)  
PO Box 30, Building 903  
NAS Jacksonville, FL 32212  
904-800-9006; [jerred.b.jackson.civ@us.navy.mil](mailto:jerred.b.jackson.civ@us.navy.mil)

**NAS Whiting Field, Natural Resources Manager**

Ms. Christina Malitz  
PWD Environmental Division  
7189 Langley Street, Bldg. 1430  
Milton, FL 32570  
850-623-7602; [christina.l.malitz.civ@us.navy.mil](mailto:christina.l.malitz.civ@us.navy.mil)

**NAS Pensacola, Natural Resources Manager**

Mr. Michael Hardy  
PWD Environmental Division  
310 John Towers Road  
Pensacola, FL 32508  
850-452-2070; [michael.j.hardy24.civ@us.navy.mil](mailto:michael.j.hardy24.civ@us.navy.mil)

**NAS Pensacola and NAS Whiting Field, Area Forester**

Shawn Woodard  
Public Works Department Pensacola  
310 John Towers Road  
Pensacola, FL 32508  
850-452-2057; [shawn.c.woodard2.civ@us.navy.mil](mailto:shawn.c.woodard2.civ@us.navy.mil)

**NSA Panama City, Natural Resources Manager**

Carrie Backlund  
NSA Panama City  
101 Vernon Ave Bldg 126  
Panama City Beach FL 32407  
850-235-5739; [carrie.m.backlund.civ@us.navy.mil](mailto:carrie.m.backlund.civ@us.navy.mil)

**NAS Meridian, Natural Resources Manager**

Jeff Mangrum  
NAVFAC SE PWD  
429 Allen Road  
Meridian, MS 39309  
601-679-3539; [jeffrey.w.mangrum.civ@us.navy.mil](mailto:jeffrey.w.mangrum.civ@us.navy.mil)

**NAS Meridian, Forester**

Larry Conner,

NAVFAC SE PWD  
429 Allen Road  
Meridian, MS 39309  
601-679-3135; [larry.a.conner5.civ@us.navy.mil](mailto:larry.a.conner5.civ@us.navy.mil)

## H. Post Award Invoice Processes & Deliverables

1. Payment Requests and Progress Reports (Invoice Package) - Submit Payment Request and additional required documents to: [swf-cesu-invoice@usace.army.mil](mailto:swf-cesu-invoice@usace.army.mil). Carbon Copy the assigned USACE Project Manager as well as your organization's point of contacts (POCs) for the additional required documents and for delinquent accounts.
2. Frequency: Quarterly plus 30-day grace period (except for the final invoice package noted below). If the coverage dates are not quarterly or preapproved by the PM (or the first/last submittal), the invoice package will be **rejected**.

<b>Quarters</b>	<b>Invoice pkgs due No Later Than (NLT):</b>
Q1: Oct-Dec	Q1: 31 Jan
Q2: Jan-Mar	Q2: 30 Apr
Q3: Apr-Jun	Q3: 30 Jul
Q4: Jul-Sep	Q4: 31 Oct

3. Payment Requests **must** be submitted on form SF270 Request for Advance or Reimbursement **with the accompanying Standard Form-Performance Progress Report (SF-PPR), otherwise the SF270 will be rejected.**
4. SF270 Request for Advance or Reimbursement
5. Block 9, Recipient Organization. **For successful set up of Electronic Transfer of Funds (EFT), the Recipient's name and address shall reflect the exact name and physical address that appears in the System for Award Management (SAM), <https://sam.gov/>.**
6. Blocks 11, (a), (b), & (c) are for the description of funds. Preferred description is: CLIN/POP Type, POP start and end dates, amount awarded (see example below); at minimum include the CLIN. If the description or the minimum CLIN information is missing, the **SF270 and SF-PPR will be rejected.**

Example:

**CLIN 0001 / Base**

**22SEP23 – 21SEP24**

**\$100,000.00**

Funding must be separated as specified on the Award document. Sub-CLINs that specify “for funding only” (e.g., numbered 000101, 000102, etc.) may be rolled into the primary CLIN (e.g., 0001) unless otherwise instructed. All others required PM approval.

The SF270 may have multiple pages. An SF270 in Excel format may be requested at: [swf-cesu-invoice@usace.army.mil](mailto:swf-cesu-invoice@usace.army.mil), however, **must be submitted in pdf format otherwise will be rejected.**

7. SF-PPR Standard Form-Performance Progress Report : The Recipient shall tailor the SF-PPR to include, at minimum, the following information:

- Separate details by CLIN as applicable
- Achievements (must detail work during quarter associated with the invoice)
- Percent Completion
- Project Status
- Problems encountered and impact of activities and personnel on schedule.
- Anticipated work in next reporting period.

**If the SF-PPR is incomplete, the SF-PPR and SF270 will be rejected.**

A tailored SF-PPR form may be requested at: [swf-cesu-invoice@usace.army.mil](mailto:swf-cesu-invoice@usace.army.mil).

8. The **Final** invoice package is due no later than 90 days from final (funded/exercised) POP end date and must include the following documents: If any of the required information below is missing, the final invoice package will be **rejected**.

Final SF270  
SF-PPR  
Final SF425  
DD882  
SF428 plus attachment B (C&S if applicable)  
SF298

Forms may be requested from the district office at [swf-cesu-invoice@usace.army.mil](mailto:swf-cesu-invoice@usace.army.mil) or found at: <https://www.grants.gov/forms>

8. *Health and Safety Plan (HASP)*. The Cooperator shall work closely with the Government to develop a Health and Safety Plan that outlines safety procedures, identifies potential risks and mitigation (e.g., personal protective equipment), identifies procedures for accessing the emergency management

system, provides reporting instructions, and includes contact information for key personnel. A copy of the HASP must be on-site during field work.

9. *Vegetation Management and Monitoring Plan.* The Cooperator shall develop a Draft and Final Vegetation Management and Monitoring Plan for each of the tasks outlined in Section C. The Cooperator shall solicit Government comments on the Draft, address the comments to produce the Final Plans, and deliver them as an electronic portable document file (PDF). Source files in Microsoft Word, Excel and/or Access, photographs and GUS data shall also be provided, if necessary.
10. *Final Report.* The Cooperator shall develop four separate Draft and Final Reports that describe the work completed at NASWF, NASP, NSAPC, and NASM. The Cooperator shall solicit Government comments on the Draft, address the Government's comments to produce the Final Reports, and deliver the Final Reports as electronic portable document files (PDFs). Source files in Microsoft Word, Excel and/or Access, photographs and GIS data shall also be provided. This Final Report should minimally include the following:
  - i. Background Information
  - ii. Summary of Restoration Efforts by Task
  - iii. Pre- and Post-Restoration Monitoring Data and Data Analyses
  - iv. Discussion of Trends in Carbon Sequestration
  - v. Recommendations for Future Monitoring and Management Efforts
11. *GIS Data.* All spatial data must be collected and delivered to the Government according to the guidelines outlined in Appendix 2.

## Appendix 1 - Optional Tasks in Follow-On Years

### Optional Task 1. Restoration Maintenance (Yr-1 Post-Treatment)

#### Background

The Cooperator shall assist NAVFAC Southeast to assess the restoration sites NASWF, NASP, NSAPC, and NASM, and provide maintenance as necessary to progress toward the restoration objectives. This work will be conducted the first full growing season after restoration measures have been completed (Yr-1 Post-Treatment).

#### Tasks

The Cooperator shall complete the following tasks:

- Assess all sites to identify remedial actions necessary for continued progression toward the restoration objectives outlined in the VMMP. Based on the assessment, the Cooperator shall complete the following as needed:
  - Complete invasive species control (mop up) in areas with substantial re-growth of invasive plants (assumes  $\leq 20\%$  of the original treatment area).
  - Replant restoration parcels that have experienced  $\geq 50\%$  mortality of planted vegetation and woody stock.
  - Conduct invasive plant control or controlled burning of restoration areas to reduce competition from annual weeds and undesirable grasses.
- If herbicides are used, enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

#### Deliverable

The Cooperator shall submit a final written report after completion of analysis and restoration maintenance activities. The final report shall include brief summary of the following: assessment findings, description of restoration maintenance activities, supporting maps, and recommendations for future management. The Cooperator shall submit the final report as an electronic portable document file (PDF), and will submit (using, for example, DoD SAFE File Exchange for large files) source files in Microsoft Word, Excel and/or Access, photographs, and GIS data (if relevant).

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### Optional Task 2. Restoration Maintenance (Yr-2 Post-Treatment)

#### Background

The Cooperator shall assist NAVFAC Southeast to assess the restoration sites at NASWF, NASP, NSAPC, and NASM, and provide maintenance as necessary to progress toward the restoration objectives. This work shall be conducted the second full growing season after restoration measures have been completed (Yr-2 Post-

Treatment).

### Tasks

The Cooperator shall complete the following tasks:

- Assess all sites to identify remedial actions necessary for continued progression toward the restoration objectives outlined in the VMMP. Based on the assessment, the Cooperator shall complete the following as needed:
  - Complete invasive species control (mop up) in areas with substantial re-growth of invasive plants (assumes  $\leq 10\%$  of the original treatment area).
  - Replant restoration parcels that have experienced  $\geq 50\%$  mortality of planted vegetation and woody stock.
  - Conduct invasive plant control or controlled burning of restoration areas to reduce competition from annual weeds and undesirable grasses.
- If herbicides are used, enter herbicide treatments into the NAVFAC Online Pesticide Reporting System (NOPRS).

### Deliverable

The Cooperator shall submit a final written report after completion of analysis and restoration maintenance activities. The final report shall include brief summary of the following: assessment findings, description of restoration maintenance activities, supporting maps, and recommendations for future management. The Cooperator shall submit the final report as an electronic portable document file (PDF), and will submit (using, for example, DoD SAFE File Exchange for large files) source files in Microsoft Word, Excel and/or Access, photographs, and GIS data (if relevant).

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## Optional Task 3. Post-Treatment Monitoring Event (Second Monitoring Event)

### Background

The Cooperator shall assist NAVFAC Southeast to conduct the **second post-restoration monitoring event** at the NASWF, NASP, NSAPC, and NASM restoration sites in accordance with the methods and metrics outlined in the VMMP.

### Tasks

The Cooperator shall complete the following tasks:

- Sample restoration sites to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC).
- Estimate aboveground vegetation cover and planted tree survival at restoration sites.
- Map areas where re-growth of invasive species is substantial.
- Maintain a geospatial information system (GIS) geodatabase that identifies test locations, date of samples, and summary results.

## **Deliverable**

The Cooperator shall submit a monitoring report after completion of fieldwork and analyses. The report shall include background, results of monitoring, supporting maps, trends for carbon sequestration efforts, and recommendations for future management. The report will be delivered as an electronic portable document file (PDF). The Cooperator shall submit the final report as an electronic portable document file (PDF), and will submit (using, for example, DoD SAFE File Exchange for large files) source files in Microsoft Word, Excel and/or Access, photographs, and GIS data (if relevant).

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## **Optional Task 4. Post-Treatment Monitoring Event (Third Monitoring Event)**

### **Background**

The Cooperator shall assist NAVFAC Southeast to conduct the **third post-restoration monitoring event** at the NASWF, NASP, NSAPC, and NASM restoration sites in accordance with the methods and metrics outlined in the VMMP.

### **Tasks**

The Cooperator shall complete the following tasks:

- Sample restoration sites to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC).
- Estimate aboveground vegetation cover and planted tree survival at restoration sites.
- Map areas where re-growth of invasive species is substantial.
- Maintain a geospatial information system (GIS) geodatabase that identifies test locations, date of samples, and summary results.

## **Deliverable**

The Cooperator shall submit a monitoring report after completion of fieldwork and analyses. The report shall include background, results of monitoring, supporting maps, trends for carbon sequestration efforts, and recommendations for future management. The report shall be delivered as an electronic portable document file (PDF). The Cooperator shall submit the final report as an electronic portable document file (PDF), and will submit (using, for example, DoD SAFE File Exchange for large files) source files in Microsoft Word, Excel and/or Access, photographs, and GIS data (if relevant).

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## **Optional Task 5. Post-Treatment Monitoring Event (Fourth Monitoring Event)**

## **Background**

The Cooperator shall assist NAVFAC Southeast to conduct the **fourth post-restoration monitoring event** at the NASWF, NASP, NSAPC, and NASM restoration sites in accordance with the methods and metrics outlined in the VMMP.

## **Tasks**

The Cooperator shall complete the following tasks:

- Sample restoration sites to provide measurements of soil bulk density (core method), soil texture, and soil organic carbon (SOC).
- Estimate aboveground vegetation cover and planted tree survival at restoration sites.
- Map areas where re-growth of invasive species is substantial.
- Maintain a geospatial information system (GIS) geodatabase that identifies test locations, date of samples, and summary results.

## **Deliverable**

The Cooperator shall submit a monitoring report after completion of fieldwork and analyses. The report shall include background, results of monitoring, supporting maps, trends for carbon sequestration efforts, and recommendations for future management. The report shall be delivered as an electronic portable document file (PDF). The Cooperator shall submit the final report as an electronic portable document file (PDF), and will submit (using, for example, DoD SAFE File Exchange for large files) source files in Microsoft Word, Excel and/or Access, photographs, and GIS data (if relevant).

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## Appendix 2 – NAVFAC SEGRC Geospatial Data Delivery and Maintenance Standards

### 1.0 Purpose

#### Overview:

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

The GRC's primary roles include:

- Act as the single point of contact for all geospatial information and services related issues in the Installation and Environment realm for the Commander Navy Installations Command (CNIC) Region in which it is located.
- Ensure that the geospatial data holdings of the Navy Facility Engineering Systems Commands (FECs) and Regions meet quality control standards for accuracy, currency and standards compliance.

This document describes the standards that must be met for the successful completion of a contracted delivery of data to be incorporated into, or used in tandem with, the Geographic Information System (GIS) at NAVFACSE. This document forms the basis for technical Statements of Work (SOWs) for projects and contracts solicited by **INSTALLATION** at NAVFACSE, which will include a GIS delivery as part of the workflow. The purpose of this document is to provide reliable guidelines with which to create, enhance, or modify NAVFACSE GI&S currently in use at **INSTALLATION**.

Project-specific contract parameters must be added to this baseline document during the creation of a specific SOW. The nature and scope of a given project make it unique, with requirements that will need to be met in regard to graphic and database design, and data acquisition methodologies. This document provides baseline standards that should be built upon for any given contract.

### 2.0 Project Descriptions

Cooperators shall furnish all necessary personnel, material, equipment, services and facilities to perform the work described in the SOW unless otherwise indicated. Services or products, which can be expected to be within a SOW include, but are not limited to, the following:

1. Digitize or scan graphic or textual information sources into a digital format.

2. Create tabular database files.
3. Collect primary data using approved global positioning system (GPS) equipment and/or explicitly stated field data collection methodologies.
4. Compile graphic data using aerial photogrammetric techniques.
5. Create ESRI ArcGIS 10.8 and Spatial Data Standard for Facilities, Infrastructure and Environment (SDSFIE) Navy Data Model (NDM) 4.3 compliant attributed data files. Cooperators should obtain a File Geodatabase from the GRC for which the final data should be delivered.
6. Produce hard copy graphic or tabular data outputs from GIS data.
7. Make approved modifications to existing GIS data provided by NAVFAC SEGRC as required to meet specific project requirements.

This document does not apply to contracts that will involve property boundary or other legally binding surveys. Cooperators or clients completing such work should contact NAVFAC SEGRC during the creation of the SOW for coordination and inputs on a project-specific basis.

### **3.0 Government-Furnished Property**

NAVFAC SEGRC or **INSTALLATION** may make source documents available to the Cooperator as deemed necessary to meet project requirements. Source documents may include, but not be limited to, the following:

1. Digital or paper maps
2. Aerial photographs
3. Tabular GIS data files
4. Data dictionary
5. Metadata

The Government will provide the Cooperator access to necessary geospatial data, reports, schematics, or other pertinent information either through the regional NAVFAC GRC, or a data copy upon completion of the appropriate request forms and/or security information.

All Cooperators are required to request an account from the regional GRC at the start of the contract.

The Cooperator must verify with the GRC that they are working with the most recent version of the dataset at the beginning of each contract and must delete any copies of data in their possession at the end of each contract.

When requesting data from the GRC, the Cooperator shall identify the SDSFIE NDM 4.3 (OR CURRENT VERSION) data layer names or know which data layers they require. The government POC will be contacted prior to the release of any information to verify requirements. A non-disclosure agreement may need to be completed prior to the release of any data.

Other equipment, such as, but not limited to, GPS receivers may be made available to the Cooperator by NAVFAC SEGRC or the **INSTALLATION** under approval by appropriate authorized personnel. Arrangements for the use of such equipment must be made directly with the source owner of the equipment whether NAVFAC SEGRC or the **INSTALLATION**.

The Cooperator shall be responsible for all materials supplied by NAVFAC SEGRC or the **INSTALLATION**. Any GIS data, or products resulting from the use of such materials, which are provided to the Cooperator by the **INSTALLATION** or NAVFAC SEGRC may not be further distributed (or otherwise made available) to external parties without prior written permission from **INSTALLATION** or NAVFACSE GIS. The Cooperator may adapt, convert, reformat, translate, or otherwise modify all or any part, of the provided data only for purposes of completing contract requirements. A written record of all changes made will be kept and submitted as part of the required metadata portion of the GIS delivery.

## **4.0 Delivery Requirements**

### **4.1 System Parameters**

NAVFAC SEGRC uses SDSFIE NDM 4.3 (OR CURRENT VERSION) with Oracle 11g and ESRI ArcGIS version 10.8 as its standard GIS data format and primary database software. However, there are NAVFACSE specific modifications to the SDSFIE NDM 4.3 (OR CURRENT VERSION) standards so the Cooperator must obtain a File Geodatabase from NAVFAC SEGRC to ensure they adhere to NAVFAC SEGRC data format requirements. Microsoft Windows 10 is the operating system. Front-end software used by NAVFAC SEGRC includes ESRI ArcGIS.

GIS files which add to, replace or otherwise modify standard base map graphics files or attribute tables (such as but not limited to roads and buildings) must coordinate with NAVFAC SEGRC and the **INSTALLATION**.

All figures included in a report that accompany the project will be delivered in a digital format. Any map-related image data sources (\*.tif, \*.jpg, etc.) presented in the document, or as part of any presentation made to NAVFAC SEGRC or the **INSTALLATION** related to this specific undertaking, will be delivered in digital, georeferenced format.

### **4.2 Database Design**

Cooperators shall consult NAVFAC SEGRC for the database design standards used from the SDSFIE by the CADD/GIS Technology Center prior to database design, data collection, or other data creation phases of the project. Standard contracts will require Cooperators to utilize existing SDSFIE NDM 4.3 (OR CURRENT VERSION) definitions of features and predefined attribute table structures. Deviations from, or additions to, the existing SDSFIE NDM 4.3 (OR CURRENT VERSION) objects must be approved by the NAVFAC SEGRC in writing prior to the delivery of any GIS product. SDSFIE NDM 4.3

(OR CURRENT VERSION) documentation is available at NAVFACSE GRC.

The Geodatabase schema shall follow the GIS Data Guide implementation of the SDSFIE data model and data layers will be captured accordingly. Information on the SDSFIE data model can be found at: <http://www.sdsfieonline.org/>

If new data is being created the Cooperator must provide the GRC with a data dictionary identifying all of the SDSFIE NDM 4.3 (or current version) 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, MS Word and PDF. Local attributes (meeting SDS experienced level) will require precise schema definitions.

For stand-alone GIS attribute tables (no graphics) or for tables including point data as coordinates, the preferred delivery format is a comma delimited, ASCII text file with all column headings specified or an MS Access table that is provided to the Cooperator from NAVFACSE GRC. A different data delivery format may be used if approved by, and coordinated with, NAVFAC SEGRC prior to file delivery.

#### **4.3 Data Integrity**

Data accuracy standards for all deliverables will be in accordance with those set forth in the section entitled GPS Data Collection Specifications.' All deliverables should follow the Data Collection Guide (DCG) chapters associated with the data being collected and shall include an accuracy report in the metadata. The DCG chapters can be obtained from the NAVFAC SEGRC or after requesting an account at <http://www.datacollectionadvisor.com/>.

The Cooperator shall employ appropriate QA/QC standards to ensure that data is topologically correct, accurate and complete (to include):

- No erroneous overshoots, undershoots, dangles or intersections in the line work
- 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.
- 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.
- No sliver polygons
- Digital representation of the common boundaries for all graphic features must be coincident, regardless of feature layer
- Geometric network connectivity must be maintained for utility networks.

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.

#### 4.4 Graphic Design

Cooperators shall deliver graphic files that match the existing geometry type for each type of feature in use on the CNRSE GIS. If a new feature must be created, NAVFAC SEGRC must approve its definition and use prior to file delivery. Cooperators shall deliver graphics in an ESRI ArcGIS 10.3 File Geodatabase format. If the Cooperator needs to submit the delivery in a different format or a combination of multiple formats, then NAVFAC SEGRC must approve the alternate format prior to delivery. All mapping data will be delivered to NAVFAC SEGRC with clean line work using the following parameters:

1. All intersecting lines shall be processed to remove overshoots and undershoots
2. Zero length segments shall be removed
3. All area features must be closed polygon shapes
4. All delivered files shall be checked to see that they are corruption-free
5. All feature elements shall have a unique Primary key assigned, consult with NAVFAC SEGRC for any applicable naming conventions
6. All feature classes shall have metadata, consult with NAVFAC SEGRC for minimum metadata requirements
7. All feature classes shall have all specified minimum attribution populated, consult with NAVFAC SEGRC for minimum attribute requirements

Graphics delivered in non-preferred formats will be subject to additional line work requirements.

The Cooperator may request copies of existing graphics appropriate to the SOW as agreed upon by the **INSTALLATION** and/or with NAVFACSE GRC. The NAVFAC SEGRC will provide such files in a File Geodatabase.

#### 4.5 Digitizing/Conversion

Where Digitizing/Conversion is stipulated in the contract, the Cooperator 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 ensure that 90 percent of all features will measure within 0.01 inches when reproduced at the scale of original imagery or data source.

#### 4.6 Data Dictionary

Accompanying the final GIS delivery shall be a digital data dictionary file that has been previously approved by the **INSTALLATION** and NAVFAC SEGRC in terms of expected content and format. For all parts of the data dictionary that match the SDSFIE NDM 4.3 (OR CURRENT VERSION), the data dictionary may reference the SDSFIE NDM 4.3

stating each feature class table being provided and each column within the table for which data has been populated. If additional codes or values outside of the SDSFIE NDM 4.3 (OR CURRENT VERSION) and the current NAVFAC SEGRC data structure domains will be utilized to populate a column, these values must first be approved by NAVFAC SEGRC and must be provided as part of the data dictionary documentation submittal. All domain list values must be accompanied by a description especially in the case of abbreviations.

#### 4.7 Feature Definitions

Should the Cooperator need to create new feature classes not in the current CNRSE GIS or the SDSFIE NDM 4.3 (OR CURRENT VERSION), NAVFAC SEGRC must first approve them. New features that are created by the Cooperator for inclusive use into the CNRSE GIS shall be defined in an appendix as part of the data dictionary documentation. Documentation of added feature classes shall follow the SDSFIE NDM 4.3 (OR CURRENT VERSION) documentation standards. Elements of the feature that must be declared in this documentation include:

1. Data Set (Category) name
2. Feature class (table) name with definition
3. Geometry type (point, line, polygon)
4. Associated attributes with definitions
5. Data type, data precision, domain table assignment, Primary Key and Foreign Key assignments, required field assignments, etc.

Any new features, which are created for a GIS delivery to be included in the **INSTALLATION** GIS, must be coordinated with the **INSTALLATION** and NAVFAC SEGRC prior to delivery.

#### 4.8 Projected Coordinate System

All geospatial data stored by the GRC resides in WGS84 datum with the appropriate UTM coordinate system for US States, Territories and insular areas. The Region's geospatial data collection is comprised of data from:

<b>Activity Area</b>	<b>UIC</b>	<b>State</b>	<b>UTM Zone (Schema)</b>
<i>NAVSTA Guantanamo Bay</i>	<i>N60514</i>	<i>Non-US</i>	<i>18</i>
<i>NAS Jacksonville</i>	<i>N00207</i>	<i>Florida</i>	<i>17</i>
<i>NAS Key West</i>	<i>N00213</i>	<i>Florida</i>	<i>17</i>
<i>NAVSTA Mayport</i>	<i>N60201</i>	<i>Florida</i>	<i>17</i>
<i>SUBASE Kings Bay</i>	<i>N42237</i>	<i>Georgia</i>	<i>17</i>
<i>NAS Orlando</i>	<i>N61007</i>	<i>Florida</i>	<i>17</i>
<i>Naval Hospital Beaufort</i>	<i>N50173</i>	<i>South Carolina</i>	<i>17</i>
<b><i>NAS Pensacola</i></b>	<b><i>N00204</i></b>	<b><i>Florida</i></b>	<b><i>16</i></b>
<i>NAS Meridian</i>	<i>N63043</i>	<i>Mississippi</i>	<i>16</i>
<i>NSA Panama City</i>	<i>N61008</i>	<i>Florida</i>	<i>16</i>

<b>NAS Whiting Field</b>	<b>N60508</b>	<b>Florida</b>	<b>16</b>
<i>CBC Gulfport</i>	<i>N62604</i>	<i>Mississippi</i>	16
<i>NAS JRB New Orleans</i>	<i>N00206</i>	<i>Louisiana</i>	15
<i>NAS Corpus Christi</i>	<i>N00216</i>	<i>Texas</i>	14
<i>NAS Kingsville</i>	<i>N60241</i>	<i>Texas</i>	14
<i>NAS JRB Ft Worth</i>	<i>N83447</i>	<i>Texas</i>	14
<i>NSA Mid South</i>	<i>N00639</i>	<i>Tennessee</i>	16

#### 4.9 Metadata

The Cooperator shall turn over, at a minimum, metadata for each feature class in XML format. The following elements of the FGDC Content Standard for Digital Geospatial Data (CSDGM) that must be included as part of the deliverable. Feature-level metadata may be required at the discretion of the government. Details on the standard can be found at <http://www.fgdc.gov/metadata/geospatial-metadata-standards>

- 1) Identification Information
  - a) Contact (Details) - *contact information for the data steward*
    - i) Person
    - ii) Organization
    - iii) Position
    - iv) Telephone
    - v) Email
  - b) Description – *characterization of the data*
    - i) Abstract
    - ii) Purpose
  - c) Time Period - *explains how current the dataset is*
    - i) Currentness Reference
    - ii) Date
  - d) Keywords – *word/phrase descriptors of the data*
- 2) Data Quality
  - a) Positional Accuracy – *accuracy assessment of the data*
    - i) Horizontal Accuracy Report
    - ii) Vertical Accuracy Report (*if applicable*)
  - b) Source Information – *list of sources and a short citation of each*
    - i) Source Citation (Details)
      - (1) Title
      - (2) Originator
      - (3) Publication Date
  - c) Process Step – *an explanation of how/when the data was created*
    - i) Process Description
    - ii) Process Date
- 3) Spatial Reference
  - a) Horizontal Coordinate System
  - b) Vertical Coordinate System (*if applicable*) – *vertical datum information*
    - i) Datum Name
    - ii) Distance Units

#### 4.10 GPS Data Collection Specifications

**INSTALLATION** GIS will accept GPS data only if the positional data are differentially corrected to assure locational accuracy. Exact accuracy levels of each data feature shall be agreed upon with the **INSTALLATION** and NAVFAC SEGRC prior to contract start.

Where field data collection is stipulated in the contract, the Cooperator 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).

At a minimum, the Cooperator shall provide resource grade GPS collection at an accuracy level of +/- < 1m and shall use differential correction to target accuracies of +/- .5 m.

Where appropriate (as stipulated in the contract or as otherwise determined by the Government), the Cooperator shall use survey grade GPS, at an accuracy level of +/- 2cm. 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.

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 should 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 will be collected at every vertex of the feature and processed as a polygon.

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.

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.

All GPS data collection specifications should follow what is outlined in the DCG chapters associated with the data being collected and shall include an accuracy report in the metadata. The DCG chapters can be obtained from the NAVFAC SEGRC or after requesting an account at <http://www.datacollectionadvisor.com/>.

## 5.0 CADD Standards

The Government may approve the use of AutoCAD when it is determined that the format will not compromise the spatial accuracy or structure of the delivered data and that the data will easily integrate with the enterprise GIS system. All CADD data shall be provided in AutoCAD 2020 and shall be in the same projection and use the same coordinate system, datum and units as stated below in the paragraph titled Geospatial Data Projection. Drawing files shall be full files, uncompressed, unzipped and georeferenced.

CADD drawings and data used for the planning, design, construction, operations, maintenance and demolition of Department of the Navy facilities and installations shall be delivered in conformance with the United States National CADD Standard, developed jointly by the National Institute of Building Sciences (NIBS), American Institute of Architects (AIA), Construction Specifications Institute (CSI), Tri-Service CADD/BIM Technology Center and several U.S. Government agencies, including NAVFAC. The United States National CADD Standard may be purchased from NIBS, from the individual publishing agencies (NIBS, AIA, CSI) or at

<http://www.nationalcadstandard.org/>

The Navy's current, network certified CADD software applications are the Autodesk version 2020 suite of CADD programs. This does not prohibit the use of other CADD systems, or third party packages designed to work with Autodesk applications. All products developed under this policy shall be saved in a format which is readable by the target system (.dwg). Any objects or entities created by other systems or software must be readable by the target system.

File naming, sheet identification and layer names shall be per the National CADD Standard (NCS).

References:

- NAVFACINST 4250.1, Electronic Bid Solicitation
- NAVFACSE Drawing Format Standards, Chapter 03 of the NAVFACSE CAD Standards, Revision 1, October 2009
- NAVFACSE File Naming Conventions, Chapter 04 of the NAVFACSE CAD Standards, Revision 1, October 2009
- NAVFAC Layer Names Master List, Appendix A, Model File Level/Layer Assignment Tables
- NAVFACSE Layer Naming Standards, Chapter 05 of the NAVFACSE CAD Standards, Revision 1, October 2009

## 6.0 Quality Assurance / Quality Control

Unless otherwise specified in the SOW the Cooperator is responsible for performing quality assurance and quality control checks of all GIS data files prior to delivery to the

**INSTALLATION** and NAVFACSE GRC. All data (graphic and non-graphic) must work with the existing **INSTALLATION** and NAVFAC SEGRG system upon submittal.

Erroneous files will not be accepted and will be returned to the Cooperator for review and correction prior to formal acceptance of the GIS product delivery.

## 7.0 Data Submittal Environment

The Cooperator shall be required to deliver a copy of all data in ArcGIS File Geodatabases specific to each installation and matching the current version of the GRC repository (on a project specific basis as determined by the government POC).

The Cooperator shall provide one (1) set of ArcGIS File Geodatabase files. Specific transmittal instructions will be provided to the Cooperator when the data is ready to be delivered.

### 7.1 Media Specifications

The **INSTALLATION** and NAVFAC SEGRG are currently able to accept deliveries of electronic data on the following media:

- DOD Secure Access File Exchange (SAFE) file transfer
- CDs in ISO format
- DVD+Rs
- USB hard drive

Digital media must have an **external label** listing a short description of contents, a sequence number if there are multiple volumes and the date of CD creation.

A **transmittal sheet** must accompany the media containing the information included on the external labels, total number of volumes being delivered, a list of file names *and* file descriptions on each volume and certification that all delivery media is free of known computer viruses.

### 7.2 Government Review

All agreements, internal or with Cooperators, that provide for the changing or creation of geospatial data must adhere to the following process for data deliverables as this data will be published in GRX.

1. All data goes through a QA/QC process to check for standards, attribute and contractual compliance. The data structure is checked to ensure it meets current standards.
2. Minimum attributes and metadata information required for the feature data layers are verified. If any of the feature layer table structures, attributes, or metadata do not meet the standards or are incomplete, the data will be returned to the submitter for corrections.

3. All data submitted to the GRC should be submitted by the Installation or the Business Line GIS POC after the data deliverable(s) has been quality checked for compliance.

Note: Business Line GIS POCs are professionals with expertise in a particular industry, e.g. planning, environmental, facilities. Business Line personnel are the actual data owners of their data layers and are ultimately responsible for the accuracy and integrity of their own data layers. Business Lines can maintain their data integrity in the M&A environment using direct department personnel, Cooperators, or GRC personnel. Resources and business processes needed to create and maintain their geospatial data are determined by each installation and Business Line.

In instances where BL GIS POCs are not available to review data, the NAVFAC SEGRC can provide this service. All contracted GIS work should have prior funding allocated for services performed by the NAVFAC SEGRG. In instances where prior funding has not been allocated, the NAVFAC SEGRC will determine the level effort and will provide a cost estimate.

### **7.3 Data Integration**

Coordination, management and maintenance of GRX involves collaboration and teaming efforts between the NITC, the GRC, Business Line personnel and geospatial data users.

As stated earlier, the NITC is the centralized information repository for GIS and other source data hosted at Port Hueneme, CA. The NITC is responsible for managing the configuration of the M&A environment and performing system-level administration of Oracle and ArcSDE. This includes assuring user-level application profile settings are properly maintained; loading plot drivers for NMCI approved plotters and printers being used by M&A users; assigning Citrix M&A user accounts and privileges; and assigning ArcSDE Geodatabase accounts for data maintainers. All account requests and privilege levels made to NITC on behalf of a user must be requested through the GRC.

**NOTE: ALL DATA ABSOLUTELY MUST BE PUBLISHED IN GRX AND NOT REMAIN CONFINED TO A PARTICULAR PWD, BUSINESS LINE, OR ON ANY INDIVIDUAL'S LOCAL WORKSTATION.**

1. Each layer published in GRX will have a designated data editor assigned who will be responsible for maintaining the accuracy and currency of the data. Designated roles are determined by each installation and Business Line.
2. Where data editor responsibilities have not been established, the NAVFAC SEGRC can be appointed this role as a reimbursable service. Contact the NAVFAC SEGRC to request funding estimate.

## 7.4 GRC Staff

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