SCOPE OF WORK
ADAPTIVE MANAGEMENT MONITORING
NATURAL RESOURCES PROGRAM - QYZH661417
MOUNTAIN HOME AIR FORCE BASE (MHAFB),
ELMORE AND OWYHEE COUNTIES, IDAHO

CESU COOPERATIVE AGREEMENT NO: W9128F-17-2-0025

1.0 INTRODUCTION:

Projects for execution under this Cooperative Agreement (CA) by the U.S. Army Corps of Engineers (USACE) do not include any functions to be performed that are inherently governmental. This determination is made with the assessment that places emphasis on the degree to which conditions and facts restrict the discretionary authority, decision-making responsibility, or accountability of Government officials using Non-Federal Entity (NFE) services or work products.

This CA shall not be used for performance of personal services. These tasks provided by the customer for execution under this CA by USACE do not include functions to be performed that are personal services.

Any modifications to Cooperative Agreement activities as outlined by this SOW must be channeled through the Grants Officer's Technical Representative (GOTR) and Grants Officer (GO) prior to NFE implementation.

NFE personnel shall also wear a distinctive NFE furnished security (ID) badge/lanyard readily identifying the individual as a NFE employee. The badge shall be worn in a conspicuous place at all times when performing work under the Cooperative Agreement including attendance at Government meetings and conferences that take place outside of the Government facility.

NFE personnel shall identify themselves as an NFE employee when answering or placing calls on a Government telephone and when leaving outgoing or incoming messages on voice mail. Use of acronyms in this identification is insufficient to meet this requirement.

All NFE email signatures shall identify them as such and will include their employer's name.

2.0 OBJECTIVE

The objective of this project is to provide the necessary personnel, equipment, and materials required to conduct vegetation monitoring, for the Natural Resources Program within the MHAFB, Small Arms Range (SAR) and Mountain Home Range Complex (MHRC) for the 366th CES/CEIE Environmental Office, located at MHAFB. The scope of this agreement includes supporting the program manager (PM) by creating a certain level of accuracy to determine vegetation communities at MHAFB by using aerial imagery.

3.0 TASK ORDERS

Overall tasks for the adaptive vegetation management monitoring includes:

1. Mapping vegetation types on MHAFB properties in Idaho
2. Compare the effectiveness of 7m RapidEye imagery to 30m LANDSAT-8 for vegetation classification

The NFE shall target the following vegetation species for the vegetation map:

a. Wyoming Big Sagebrush
b. Green and Gray Rabbitbrush
c. Sandberg Bluegrass
d. Cheatgrass
e. Crested & Bluebunch Wheatgrass

If possible:

f. Winterfat
g. Idaho Fescue
h. Thurber's Needlegrass
i. Exotic Annual Plants
j. Idaho State Listed Noxious Weeds

3.1 Task 1 - Acquire Imagery

The NFE will acquire satellite or aerial imagery at a sufficient resolution and frequency to facilitate vegetation mapping on MHAFB properties in Idaho of over 600 acres. Imagery at sufficient resolution for this project relates to what imagery is available and the level of accuracy the NFE can use this imagery to determine vegetation communities. The properties that meet this criterion are the MHAFB, Small Arms Range (SAR), Saylor Creek Bombing Range (SCR), Juniper Butte Bombing Range (JBR), and No-Drop Site 1 (ND-1). Purchase imagery with sufficient copyrights so that the AF can reanalyze the images at a later date using other methods. Rights to distribute the images are not needed. Acquire LANDSAT-8 imagery for comparison.

Suggested imagery specs:

- 7 meter resolution
- 5 bands
- <10% cloud cover
- 16-bit radiometric resolution
- 5 different images taken during different seasons

3.2 Task 2 - Conduct an area-wide vegetation classification of MHAFB facilities

The NFE will develop and submit a work plan that includes a costing by property (as listed above) for determining vegetation communities during different seasons. The installation will utilize this work plan to determine the extent of work that will go forward.

3.3 Task 3 - Accomplish Field Effort

The NFE will utilize existing monitoring reports and conduct field data collection to facilitate classification of vegetation from imagery acquired in Task 1. Sample plots may require three (3) or more visits to assess phenological changes that correlate with imagery.

The properties to be monitored under this task order will be determined from the results of the work plan, but may include any of the MHAFB, SAR, SCR, JBR, and ND-1. These sites are in Elmore and Owyhee Counties, Idaho.

Field data collection locations may be selected using a suite of metrics to maximize the diversity of vegetation sites. These metrics may include:

(1) dominant vegetation type,
(2) whether the area had burned,
(3) date of most recent fire since 2000,
(4) restoration treatment (including seeding and/or herbicide application),
(5) and whether the location had been previously monitored.

Geographic information system (GIS) layers may be used to improve accuracy. Restoration activity data will be provided by MHAFB. The dominant vegetation GIS layer will also be provided by MHAFB, but note this was created using desktop mapping. As such, it has not been ground-truthed, and may not represent true conditions.

Collect any ancillary observational data such as wildlife observed on datasheets (to be attached in report appendix).

3.4 Task 4 - Reporting

The NFE will report the findings of the project to include detectable changes in vegetation where historic data is available. Submit a draft report to the PM. Comments and edits will be provided for integration into the final report. Findings are anticipated to include effects of management actions where detectable, success or failure of management actions if detectable, and how the weather may have influenced the monitoring results and success of vegetation delineation. Provide the original field data collection sheets as an appendix to the report. Provide in agreed digital format for future use the GIS data, photos, and spreadsheets of data collected.

3.5 Task 5 - Training and Conferences

The NFE will provide up to four (4) hours of training and a user's guide to MHAFB personnel on the use of the data products and how reported results within the draft/final report were derived.

The NFE will attend the regional conference to present their findings. The location of the regional conference is to be determined.

4.0 QUALIFICATIONS

Field technicians should have the required knowledge and expertise to conduct the monitoring protocols and to successfully identify the plants present. Field technicians shall pass a

background check. Field technicians shall have recent documented experience accomplishing similar work at Mountain Home Air Force Base.

5.0 ACCESS TO MHAFB PROPERTIES

Site access is to be under USAF control. Access to ND-1 is un-restricted. Access to MHAFB requires the personnel to pass a background check. The SAR, JBR, SCR Impact Area, and MHAFB flightline have restricted access. Notification is to be provided to 366th CES/CEIE, phone (208) 828-1784, 2 weeks in advance if access is needed to USAF controlled lands. USAF may provide a pass and keys or an escort to restricted areas. Duty hours may be affected by weather, training, and flight schedules. Access to USAF sites may be limited and may occur on non-consecutive days, or portions of non-consecutive days. The NFE may need to work on weekends or holidays to gain access to restricted areas. All personnel who need access to Air Force lands are required to attend a 0.5 hour Natural and Cultural Resources Training and a 0.5 hour Explosive Ordnance Disposal briefing before being allowed access.

6.0 GOVERNMENT FURNISHED MATERIALS

The Government will provide shapefiles for vegetation, soils, slope/aspect, past treatments, wildfire, LiDAR, and property boundaries as well as provide other GPS locations for applicable data, if existing, upon request. The government will also provide past vegetation monitoring reports and weather station data from SCR & JBR. Keys or escorts for access to properties will be provided, as appropriate.

7.0 DELIVERABLES

1. Provide quarterly progress reports.
2. Develop and submit a work plan/schedule as per Task 2.
3. A draft report as described within Task 3 to be submitted to the PM by email. Include all field datasheets in an appendix. Include all GIS data on a hard drive. *Include any ancillary observational data such as wildlife observed on datasheets* (to be attached in report appendix).
4. Conduct a training session and user's guide as per Task 5
5. Attend the regional conference (location TBD) to present findings from this task order.
6. Begin preparing the final report.

8.0 PERIOD OF PERFORMANCE

The period of performance is 12 Months.

9.0 OPTIONAL TASKS*

Based on the findings from the use of satellite and aerial imagery to determine vegetation communities at MHAFB properties, the installation may conduct additional task which include:

1. Completing final report
2. Develop a methodology to detect vegetation change over time from repeatable project methods
3. Develop a methodology and demonstrate the methods to detect the effectiveness of past land management treatments such as post-fire rehabilitation seeding and herbicide applications

*A modification will be issued to include these tasks if necessary. Please include a price for each in your proposal.

10.0 Points of Contact

The POCs for USACE are Ms. Sarah Miller at (402) 995-2625 and Ms. Kali Evans at (402) 995-2295. Routine and overnight (express) correspondence should be addressed as follows:

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