Mission Support Alliance

Statement of Work

Title: Hanford Natural Resource Trustee Council (HNRTC) Natural Resource Damage Assessment (NRDA) Data Management System (DMS) Phase II Design and Implementation of System Architecture
Revision Number: 0
Date: June 14, 2013

Statement of Work for

Hanford Natural Resource Trustee Council (HNRTC) Natural Resource Damage Assessment (NRDA) Phase II Data Management System (DMS) Design and Implementation of System Architecture

Revision 0
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*BTR**		
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* Approval for Technical Content
**Concurrence for Contractibility

1.0 INTRODUCTION / BACKGROUND

Mission Support Alliance, LLC (MSA) has been tasked by the Hanford Natural Resource Trustee Council (HNRTC) to implement a data management system (DMS) for the storage of content related to the Natural Resource Damage Assessment (NRDA) process (42 USC 9601 et seq., 43 CFR Part 11). The DMS will store, organize, and disseminate new and historic analytical and geospatial data, and documents used to assess potential injury to natural resources and the services they provide. Throughout this Statement of Work (SOW), historic data refer to existing data available from a variety of sources that were collected for diverse purposes other than NRDA (e.g., River Corridor Risk Baseline Assessment, routine environmental surveillance, etc.). New data refers to information collected specifically to support the NRDA process.

The HNRTC is supported by seven technical working groups (TWGs) assisting with the injury assessment process, including Data Management; Source/Pathway; Groundwater; Aquatic Resources; Terrestrial Resources; Human Uses; and Restoration. Guidance documents were prepared by HNRTC contractors to facilitate effective data management for the Hanford Injury Assessment Process. Project planning documents consulted to support the DMS scoping effort, included:

- *Hanford Natural Resource Injury Assessment Data Management Plan*, published by Industrial Economics Inc. and Sirius Computer Solutions (August 2011)
- *Hanford Natural Resource Injury Assessment Data Management System Conceptual Framework* published by Industrial Economics Inc. and Sirius Computer Solutions (September 2011)
- *Hanford Natural Resource Damage Assessment Quality Management Plan*, published by EcoChem, Inc. and Industrial Economics, Inc. (August 2011).

Each TWG participated in the DMS scoping process to provide a description of their information management needs. Findings of the DMS scoping activity, with consideration of the planning documents provided by the HNRTC, were used to develop this SOW to identify and implement a functional DMS.

This SOW identifies support necessary for implementing and testing a DMS architecture that meets the general and specific requirements described in the sections below. All interactions between the DMS Architecture Contractor (Contractor) and the HNRTC or TWGs shall be facilitated by the Data Management Team, which shall be defined and staffed by MSA.

2.0 OBJECTIVE

The objective of this scope of work is to implement and test a data management system to support the HNRTC in the natural resource injury and damage assessment processes. Once tested and approved for use, the DMS shall be capable of managing information for the duration of NRDA-related efforts, as determined by the HNRTC.

3.0 DESCRIPTION OF WORK – SPECIFIC

The Contractor will work in collaboration with the Data Management Team (staffed by MSA) to implement a DMS to accept, store, manage, normalize, organize, display, access, and disseminate data to be used by the HNRTC in the NRDA process. Specific tasks managed under this SOW are stated below. Additional requirements and specifications of the DMS are listed in Section 4.0.

3.1 Task 1: Setup and Implementation of the DMS

The Contractor will demonstrate the following:

- Current applications/functions of the proposed DMS architecture.
- Abilities and limitations of the proposed DMS architecture.

The Contractor is responsible for providing all necessary hardware, software, and programming necessary for data storage, networking, configuration, hosting, security, licensing, and accessibility, and potential transfer of management or content of the DMS.

The Contractor shall participate in an initial testing process (proof-of-concept) to demonstrate acceptability of the DMS to the HNRTC and the TWGs. Example data will be provided for inclusion in the DMS by the Data Management Team and will be viewed and accessed by HNRTC and TWGs.

The expected duration for this task is 120 days.

3.2 Task 2: Provision for Operation and Maintenance of the DMS

This SOW allows a provision for the continued operation and maintenance (O&M) of the DMS by the Contractor following implementation and a demonstrated proof-of-concept. During O&M, all requests involving the addition of content or features, or modification to the structure, programming, access, or operations of the DMS shall be vetted through the Data Management Team and directed in writing by the MSA Buyer's Technical Representative (BTR) to the Contractor.

Commencement of the O&M phase would follow the conclusion of the Setup and Implementation task and would extend for the project duration (up to 10 years).

3.3 Task 3: Provision for Transfer of Management or Extraction of Content

If required, the Contractor shall allow for the management of content within the DMS to be transferred from MSA to successive HRNTC and TWG appointees or contractors. The Contractor shall also allow for a complete extraction of content to serve as a project record in the event of project closure or subcontract termination.

Transfer of DMS management or extraction of content would be directed in writing by the MSA BTR, if required.

4.0 REQUIREMENTS

All work shall be performed in accordance with the following requirements and any documents, which by this reference are made a part of the SOW. Technical direction for work performed within this scope shall be provided by the DMS Project Manager or qualified and approved designee. Contract direction and scope-related changes shall be provided by the MSA BTR.

The DMS at minimum shall:

- Provide proof of existing technology. Proposed technology should be readily demonstrable.
- Provide option for out-of-the-box product use.
- Provide option for limited product customization.
- Provide evidence of an existing environmental data user/client base.
- Provide web-based access and multi-platform support.
- Not require individually-licensed third-party software installation to use.
- Provide cloud-based hosting.
- Preserve original files (golden record).
- Offer modularity to add or remove features as client/user needs evolve.
- Provide content independent of the Hanford Local Area Network (HLAN).
- Allow transferability of content/management.
- Manage content and accessibility by user/group, as defined by the Data Management Team.
- Facilitate integration of historical data from a variety of sources with new data.
- Provide options for short- and long-term management and stewardship of content.
- Provide system scalability in terms of content, users, and capabilities.
- Use up-to-date security protocols to protect the data and user information.

As defined in this SOW, the Contractor will demonstrate the ability of the DMS to provide the services described in Sections 4.1 through 4.5.

The content presumed to be stored in the DMS includes:

- ☐ Documents (e.g., reports and other file types including Microsoft Word, Microsoft Excel, Adobe Acrobat PDFs, photographs, and scanned content),
- ☐ Environmental Data (e.g., analytical results and associated metadata); and,
- ☐ Geospatial Content (e.g., GPS coordinates, GIS mapping layers, aerial photography, topographic contours, etc.).

4.1 Document Management

Document Management shall consist of the acceptance, storage and organization of a variety of file types. The Document Management component of the DMS should allow administrators and appointed users to upload, organize, view, and retrieve relevant content. The Document Management component shall provide an organized file structure as well as keyword search capability for intuitive user navigation. Content restrictions (i.e. read only content, limited access, administrative and general user privileges) may be required at this level.

4.2 Environmental Data Management

Environmental Data Management within the DMS shall consist of a database to store and manage analytical data and supporting metadata provided to the Data Management Team by the TWG Data Providers, TWG-appointees, qualified contractors, or analytical laboratories. The Contractor shall work with the Data Management Team to facilitate acceptance, consolidation, normalization, display, and retrieval of project data. The Environmental Data Management component of the DMS should provide an intuitive query interface, including dynamic drop-down menus, a real-time display of results, and a range of common file output types to download results (e.g., Microsoft Excel, Microsoft Access, delimited text-only content). Integration of environmental sampling locations and/or results with geospatial display will be required where such metadata are provided with analytical data.

4.3 Integration of Historical and New Data

The Contractor will work closely with the Data Management Team to provide a mechanism to integrate historic data from multiple sources with newly collected content reported by an analytical laboratory. For data submittals that do not meet standard format for inclusion in the database, the Contractor will consult with the Data Management Team to evaluate options for content normalization or secondary storage (i.e., store native content separate from the database). Any data transformation (i.e., unit conversions) or content normalization (i.e., media types, location descriptions, analyte names) shall be documented to ensure traceability from original

source to DMS results. The Contractor will be advised on the appropriate transformations and normalizations of content by qualified Data Management Team.

4.4 Geospatial Data Storage and Display

Storage and display of geospatial data are crucial to the success of this project. The DMS shall provide a geospatial interface to view spatial data and maps, potentially including layers of topography, bathymetry, vegetation cover, critical habitat, current and historic structures and infrastructure, aerial photography, terrestrial and groundwater elevation contours, and other content as provided to the Data Management Team by TWG Data Providers, TWG-Appointees, or site contractors. The geospatial display should be integrated to the extent practicable with geotagged analytical results (or metadata groups) stored in the DMS' environmental database. The Contractor will work with the Data Management Team to obtain and manage project-specific geospatial data.

4.5 Technical Requirements

The Contractor shall provide a DMS which meets the following technical requirements:

Information Storage

- Provide a secure, web-accessible repository for documents, analytical data, geospatial data, photographs, articles, quality assurance documentation, and other relevant content.
- Utilize open source, non-proprietary code/platform to maximize adaptability for evolving technological demands and users over time.
- Provide remote and redundant storage of content to assure integrity of content, quality, security, and accessibility.
- Provide storage scalability for addition of content/flexibility to meet technological changes over project duration (which could extend 5-10 years).

Information Organization

- File content shall be keyword searchable.
- Content navigation shall include an adaptable, intuitive, managed file structure for documents and reports.
- DMS content shall be managed with instinctual navigation (i.e., tabs, breadcrumbs) between document libraries, analytical databases, and geospatial content.
- Environmental database content shall be accessible via both dynamic/tiered query structure and a back-end query (e.g., SQL).

- The DMS shall impose content completeness criteria for ease of organization of submitted content. Completeness criteria may include OCR documents for indexing, keywords, data format, location assignment, and source tracking.

Information Access

- The DMS shall provide secure, user-specific access to managed resources.
- User access and content restrictions will be specified in user/group profiles provided to the Data Management Team as designated by the Data Management TWG.
- The DMS shall allow read-only and managed administrative access to prevent unintended or malicious destruction of information.
- The DMS shall allow for managed submission of content (documents, data, maps, photographs, etc.) by the Data Management Team, approved contractors, or appointed Data Providers.
- Information access and user privileges (including DMS content administration) shall be managed in agreement with the Roles and Responsibilities of the Data Management Team and in coordination with the Data Management TWG.

Information Dissemination

- The DMS shall provide content via managed, secure, internet-based applications.
- The DMS shall demonstrate interoperability among common web browsers and operating systems to accommodate the majority user base.
- DMS content shall be accessed and disseminated via intuitive navigation and content groupings.
- DMS content shall be presented and disseminated using common file types (e.g., Adobe PDF, Microsoft Word, Microsoft Excel, JPG, etc.).
- An environmental data query interface shall be integral to the DMS.
- The DMS shall provide an online viewer to display stored geospatial content.
- The DMS shall provide adequate user documentation (User's Guide/Navigation Help), data dictionaries, and general support links to satisfy basic user needs.
- The DMS shall provide links to an online or downloadable DMS help file as well to the project point-of-contact or data steward.

4.6 Environment, Safety, & Health (ES&H) Requirements

The Contractor shall exercise a degree of care commensurate with the work and the associated hazards. The Contractor shall ensure that management of ES&H functions and activities is an integral and visible part of the Contractor's work planning and execution processes. The

Contractor shall flow down ES&H requirements to the lowest tier Contractor performing work on the Hanford Site commensurate with the risk and complexity of the work.

4.6.1 Safety Requirements

No permit or unique environmental requirements exist for this task.

The work location shall be in an office environment. The safety class of this task is "General Services." It is the policy of MSA that every project member, including contract employees, be responsible for continuous improvement of safety and compliance with general safety practices. The Contractor shall meet any safety requirements applicable to the job duties and requirements of the tasks being performed.

4.6.2 Quality Assurance and Control

The Contractor shall provide quality assurance and control over the transformation or normalization of content, including environmental data.

4.6.3 Quality Assurance/Inspection Requirements

There are no specific quality assurance inspection requirements applicable to the completion of this service contract.

4.6.4 Software Products and/or Services Where Software is Used

If applicable, the subcontractor will perform work in accordance with MSC-PRO-309, *Controlled Software Management.*

4.7 Government Property

Although not anticipated, the Contractor will be responsible for managing any Government-owned property as required in the Subcontract Provisions.

5.0 PERSONNEL REQUIREMENTS

5.1 Training and Qualifications

The Contractor shall ensure that its personnel meet and maintain the appropriate training, qualifications, and certification requirements necessary to meet the objectives of this SOW. Subcontract-performing personnel working from the Hanford Site shall be current with Hanford General Employee Training (HGET).

The Contractor personnel engaged in work defined by the scope of this SOW must be competent to satisfactorily produce the required deliverables.

5.2 Security and Badging Requirements

MSA will ensure that adequate security and badging requirements, including site-specific training, are arranged in advance of any Site visit by the Contractor.

5.3 Site Access and Work Hours

The Hanford Site operates on the standard 8/9's schedule. The standard work day consists of nine (9) hours of work between 7:00 AM and 4:30 PM Pacific Time with one-half hour designated as an unpaid period for lunch. An eight (8) hour work day is substituted on alternate working Fridays, and no work occurs on the alternate non-working Friday. To the extent practicable, MSA will accommodate Contractor work schedules, should they occur outside of normal Hanford Site operating hours.

6.0 MEETINGS / SUBMITTAL

Contractor shall participate in all meetings as required by the MSA BTR. Meetings scheduled by the MSA or its clients will be performed during regular work hours in the Pacific Time zone, noting that Contractor schedules may vary. Every effort will be made to accommodate both parties within regularly scheduled work hours.

7.0 DELIVERABLES AND PERFORMANCE SCHEDULE REQUIREMENTS

In response to this SOW, the Contractor is expected to provide itemized cost estimates for the specific tasks and requirements identified in Sections 3.0 and 4.0. Cost estimates for the tasks identified in Section 3.2 shall consist of a base year estimate with two optional years of additional service.

Section 7.1 below describes the deliverables associated with this SOW. Section 7.2 identifies the Proposed Schedule of performance, to be initiated following award of this Contract.

7.1 Deliverables

The DMS architecture provided by the Contractor for this SOW shall consist of all necessary hardware, software, programming, data storage, networking, configuration, hosting, security, licensing, and managed access requirements to evaluate the proof-of-concept for the DMS' operation and ability to satisfy HNRTC data needs.

The Contractor will demonstrate the proof-of-concept by working in cooperation with the Data Management Team to successfully upload, store, organize, manage, transform or normalize (as necessary) "sample" content (documents, data, maps, etc.) for display, query, and download.

The Contractor shall be capable of providing continued operation and maintenance of the DMS for the duration of NRDA-related efforts, as determined by the HNRTC. In addition, the

Contractor shall designate a method to transition DMS content to the HNRTC in the event of managerial turnover, project closure, or contract termination.

7.2 Schedule

Prior to award of Contract, the Contractor shall provide an itemized cost estimate for performing this scope of work, as defined in Section 3.0 and deliverables specified in Section 7.0.

Task 1: DMS Setup and Implementation

The DMS Setup and Implementation start date is dependent upon concurrence of the HNRTC and/or Data Management TWG on this SOW. The project duration for Setup and Implementation is 120 days from Contract award.

Following award of this Contract, the schedule for implementing the DMS and proof-of-concept testing is as follows:

0-30 Days: Contractor provides demonstration of a working prototype of the proposed DMS architecture for use by the HNRTC. Contractor outlines available "add-ons" for consideration in the DMS (e.g., screening value comparisons, analysis tools) to demonstrate integrative capability over time.

Simultaneously, Data Management Team assembles "sample" content (documents, pictures, geospatial, analytical data) to test the proof-of-concept for the DMS.

30-60 Days: Data Management Team meets with the Contractor to discuss the types, formats, and initial organization of content to be submitted for inclusion in the DMS for the proof-of-concept evaluation.

Contractor configures initial architecture for DMS. Contractor defines administrative and general user profiles for DMS. Roles, responsibilities, and interactions of the Contractor and Data Management Team for the proof-of-concept effort are delineated.

Contractor (in person, via conference call, or via web meeting), using generic content, demonstrates the administrative features of the DMS and provides instruction for addition and management of future content.

60-90 Days: Data Management Team supplies "sample" content (e.g., documents, pictures, geospatial, analytical data) to the Contractor for inclusion in the DMS using a standardized HNRTC data submission procedure.

Contractor works with Data Management Team personnel to develop data import schema and an approach for the normalization of data field content based on supplied "sample" content.

Contractor works with Data Management Team to reconcile data submission issues, import issues, formatting issues, data type issues, and any other errors or inconsistencies encountered

during the DMS population process. It is expected that due to the disparate nature of incoming data types, substantial integration efforts will be made to unify content in the early stages of this project. The Data Management Team will provide direction for the standardization of content, as needed.

90-120 Days: Contractor continues to work with Data Management Team to import "sample" content, organize submitted content for NRDA-specific quality assurance (QA) screening (to be performed by Data Management Team-appointed QA Coordinator), and organize content for search and retrieval by Data Consumers.

DMS, prepopulated with "sample" content, will be prepared for developmental testing by Data Management TWG-appointed Data Consumers. Data Consumers will perform a proof-of-concept evaluation by testing access, navigation, searchability, data query, content display, content export, and content download of the DMS.

Contractor will work throughout this testing period with Data Consumers and Data Management Team to improve the user experience and to ensure that DMS content is securely, logically, and accurately stored and retrieved.

Task 2: Provision for Operation and Maintenance of the DMS

Operation and Maintenance of the DMS will be executed in optional performance periods with implementation determined by the HNRTC and/or the Data Management TWG and directed by the MSA BTR.

Task 3: Provision for Transfer of Management or Extraction of Content

A request to transfer management or extract full content of the DMS will be issued, as needed, upon transition of DMS management, subcontract termination, or project closure.