

**AIR FORCE**

**UTILITIES MANAGEMENT  
PLAN (UMP)**

**PILOT**

**PERFORMANCE WORK STATEMENT**



**U.S. AIR FORCE**

**12 August 2021**

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## 1.0 INTRODUCTION

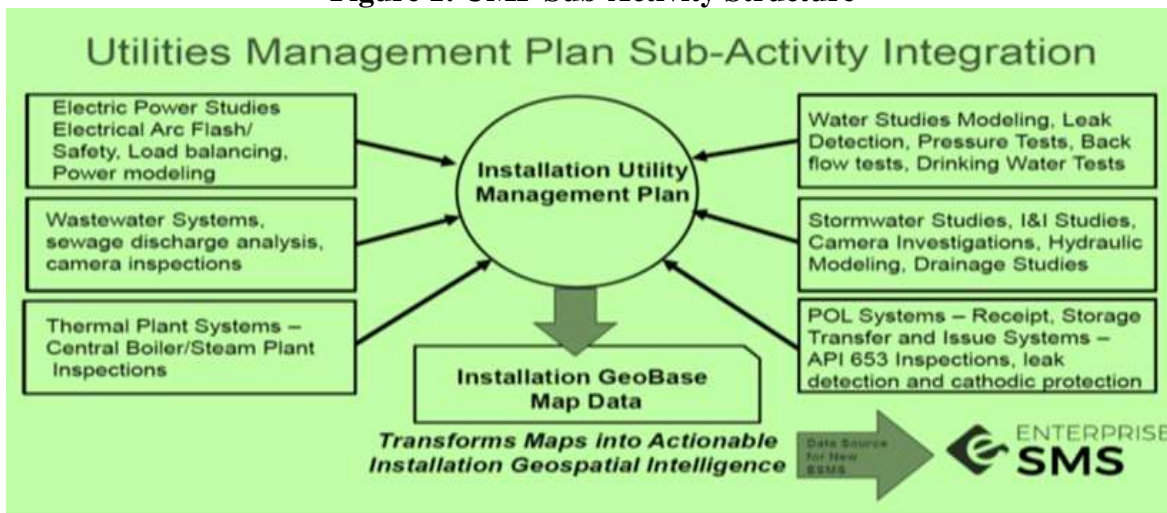
### 1.1 Mission

The Air Force Civil Engineering Center (AFCEC) Operations Directorate, Asset Visibility Division, Utilities Branch (AFCEC/COAU) is responsible for facilitating Built Infrastructure Assessments (BIA) for utility distribution systems on Air Force Bases (AFBs) in accordance with (IAW) the Office of Secretary of Defense (OSD) guidance. It is the Government's intent to procure contracted services to produce installation Utilities Management Plans (UMPs) for two pilot test installations.

### 1.2 Purpose

Engineering Services are required for assessing the current state of built infrastructure associated with the utility systems at Robins AFB, GA (RAFB) and Moody AFB, GA (MAFB) as pilot bases, to develop an installation comprehensive UMP and develop short-term sustainment (1-4 years) and long-term (5-10 years) investment requirements for asset management implementation at each base. A cohesive workflow of our UMP Sub-Activity graph representation is shown in Figure 1. The UMP Sub-Activity Integration Strategy incorporates system studies, Installation Maps Data Update, and transforms Grid Maps into Actionable Installation Geospatial Intelligence for the larger Enterprise Utilities Sustainment Management System (SMS) to effectively inform decision to invest in the right asset that is right-sized, and at the right time. The Government plans to utilize the UMP for improving AF asset visibility, asset management planning, developing executable programming tools, achieving sound and risk-balanced investment decision making to restore, modernize and recapitalize requirements for sustaining our utility infrastructure, and drive innovation in asset management. The Air Force Civil Engineer community will use the UMP for project scoring, future programming, and providing cost information for identified initiatives to ensure our utility infrastructure is constructed, operated, sustained, and maintained at the lowest overall lifecycle cost.

Figure 1: UMP Sub-Activity Structure



### 1.3 Scope

The Contractor shall be required to gather utilities information including engineering reports and studies and/or perform built infrastructure assessments and produce studies for utility systems including electrical, potable water, sewer/wastewater, natural gas, mechanical systems (thermal, heat, steam, etc. as applicable), storm water, and fuels systems in order to develop a UMP for each pilot base. The UMP efforts will include validation and providing updates to each installation’s Geographical Information Systems (GIS) and Real Property data/records. The Contractor shall provide all necessary personnel, facilities, equipment, and materials to complete the tasks identified in this Performance Work Statement (PWS) for RAFB and MAFB. Each individual UMP will include a review of previous system studies and perform a gap analysis (section 2.3) of the installations’ GIS information, and perform any required additional system assessments per the requirements outlined in Section 3.1 of the PWS, identify and outline recommendations and develop a prioritization of corrective actions to support asset management in the Civil Engineer (CE) enterprise.

## 2.0 REQUIRED SERVICES

### 2.1 Data Collection and Validation

The Contractor shall perform data collection in support of AFCEC’s asset management programs IAW the requirements of this PWS. Data collection will consist of obtaining existing information in the form of drawings/reports upon conducting site visits to the installations. Where available, the Government will provide the Contractor the latest studies/reports, GIS data files, Installation Energy Plans (IEP), Real Property Reports, and access to the bases’ Installation Development Plan (IDP).

### 2.2 Studies

The Contractor shall provide all necessary personnel, facilities, equipment, and materials to complete the tasks identified in this PWS for the pilot bases. The Contractor shall provide services to review existing utilities studies, current GeoBase Databases (GDBs) and other required source material as a pilot effort to support our objective in developing comprehensive Utilities Management Plans for Utility Distribution Systems across the Air Force Civil Engineering Enterprise. Available utilities reports should have occurred within five years of execution of this task order (TO). The Government will provide the Contractor with reports for Government-owned utilities systems performed within the last five years, as available. The Contractor shall review and utilize the information from those current studies to aid in the development of the installations’ UMP. The Contractor will not be allowed to accomplish new studies.

**Table 1: Available Studies & Utilities Linear Segmentation Update (≤ 5 years)**

Installation	Electrical (Power System)	Fuels	Mechanical / Thermal	Natural Gas	Storm Water	Waste Water	Water Potable
Moody AFB	2021	N/A	N/A	N/A	N/A	2018*	N/A
Robins AFB	2018	N/A	N/A	N/A	N/A	2016	N/A
Utilities Linear Segmentation Ph2 Program Update (≤ 5 years)							
Moody AFB	2021	2018	2021	2021	2018	2018	2018
Robins AFB	2021	2018	2021	2021	2018	2021	2021

\* - Only applicable for the Waste Water Treatment Plant, not the distribution system

### **2.3 GAP Analysis**

Review existing Real Property Report (7115), GIS data files and perform Gap Analysis of all utility sub-domains to determine the completeness, correctness and currency of the system information, inventory and capacity and condition of assets in order to identify additional field collection, and other data requirements.

The Contractor shall perform on-site visits to collect supplemental information for existing utilities in areas not sufficiently identified by the Government-supplied data, to support development of the UMP for utilities systems in areas not sufficiently identified by the Government-supplied data and information:

- Utility system GIS data
- Design documents, record drawings, maps and schematics
- Operations and maintenance documents and data, inspection and assessment data, certification reports
- Installations current asset management practices and systems for comparison to industry best practices, including International Organization of Standards (ISO) and DoD Unified Facilities Criteria (UFC)
- Utility Technical Studies (UTS) to identify additional data/information gaps will need to be satisfied/collected during site evaluation/field surveys.
- Identify opportunities for improvement as part of the gap analysis and included in the Road Map to assists installations shift to a more planned versus corrective asset management approach.

The Contractor shall use the latest source data to conduct analysis on the utilities sub-domains. AFCEC/COAU will coordinate with the Contractor to provide all sources of data within the scope of the analysis. Source data available is comprised of, but not limited to:

- a) SDSFIE attributes: Data collection is paramount in order to ensure accurate modeling for electrical systems. Utilize GIS SDSFIE 4.0.3 attributes (Attachment 1). Additionally, ensure data collection on the OSD mandatory Linear Segmentation attributes once complete at your location.
- b) ArcGIS MapBook w/ Grid page of built infrastructure: Utilities Map: Utilizing official, authoritative geospatial data stored, maintained, and distributed by the AFGIMS system, provide maps (in PDF format and legible at 8 ½” x 11”) of the project area with the layers:
  - Utility
  - Buildings with MDI shown for each building
  - Streets/Roads (include name)
  - Highlighted project utility segments with utility segment numbers. Segment numbers on maps should match segment numbers on PSW. Use segment numbers from the installation’s official, authoritative Linear Segmentation data (in Geographic Information System (GIS) format), where available.



- For a base that has not yet completed the Utility Linear Segmentation effort, use a consistent numbering convention on the PSW and on the geospatial map. The linearly segmented geospatial data shall be SDSFIE-compliant and stored within and available from the AFGIMS system.

The Contractor shall utilize the seven (7) steps listed in Attachment 2, which provide a comprehensive process outlining the procedures developed by AFCEC/COAU and using OSD's required attributes listed in Table 2, at a minimum update the installation's GIS database accordingly.

**Table 2: OSD Required Attributes for Linear Segmentation (LS)**

DESCRIPTION	ATTRIBUTE
Asset Type	[sdsFeatureName]
Real Property Unique Identification (RPUID)	[realPropertyUniqueIdentifier]
Segment Identification Number	[segmentID]
Geographical/Functional Area	[functionalArea]
Operational Status (Breaks/Outages)	[operationalStatus]
Total Length	[measuredLength]
Use	[utililtyNetworkType]
Location Coordinates	[latitudeFrom to – longitudeFrom to]
Installation Year	[installedDate]
Material Year	[generalMaterialType]
Size (diameter to include Unit of Measure)	[lengthSizeUOM]
Condition Rating	[condRatingValue]

## 2.4 Short & Long-Term Requirements

After evaluation of current condition from available studies (existing and new as required), interview of various base CE personnel, and performed investigations, the Contractor shall use the collected data to generate short-term (1-4 yrs) sustainment requirements. Also, use similar information to develop long term (5-10 yrs) repair and modernization requirements that can effectively aid in improving the overall health and condition of Government-owned installation's utilities infrastructure. Requirements shall support development of the annual EX-Plan requirements via decentralized funding, development of 1-n priority listing of long term requirements for centralized funding. Develop a detailed project description and Rough Order of Magnitude cost estimates.

## 2.5 Energy Resilience

Energy resilience provides installation commanders, mission operators, energy managers, and utilities stakeholders the capability to ensure that energy generations systems, utilities infrastructure, equipment, and fuel supplies are available and reliable to support critical mission to recover from energy disruptions that could impact mission assurance at these installations.

The level of resilience is defined by the Mission Owners and is a critical driver in the IEPs that identifies the base current level of resilience and defines the level of resilience necessary for the base overall and each of the identified missions at that location. The existing installation-scale

gaps are outlined in the IEPs and are grouped into the area of the AF's five (5), key resilience attributes; Robustness, Redundancy, Resourcefulness, Response, and Recovery (5Rs), which each drive a characteristic of resilience shown in figure 2 below:

**Figure 2: Energy Resilience 5Rs**

	Attributes: "what does it need to be?"	Qualities: "how does it make it resilient?"	Elements: "what about that quality makes it resilient?"
<b>Preventative</b>	<b>Robustness</b>	<ul style="list-style-type: none"> <li>Performance monitoring</li> <li>Hardened infrastructure</li> <li>Physically secure</li> </ul>	<ul style="list-style-type: none"> <li>RMF compliant control systems</li> <li>Active vs passive performance monitoring</li> <li>Maintenance schedule and checklist</li> <li>PQ-Voltage/frequency/phase match</li> <li>Site access protocols (physical security)</li> </ul>
	<b>Redundancy</b>	<ul style="list-style-type: none"> <li>Eliminate single points of failure</li> <li>Distributed generation topology</li> </ul>	<ul style="list-style-type: none"> <li>Mesh and Ring with bi-directional flow</li> <li>Modular assets to account for system component maintenance and down-time (i.e., shared, mobile backup generators)</li> </ul>
	<b>Resourcefulness</b>	<ul style="list-style-type: none"> <li>Community Coordination</li> <li>Available power generation</li> <li>Energy storage</li> <li>Recurring and relevant training and exercises</li> </ul>	<ul style="list-style-type: none"> <li>Community planning and resource integration</li> <li>Uninterruptible power (UPS)</li> <li>Nearby generation</li> <li>Distributed generation</li> <li>Renewable energy</li> <li>Load shedding</li> <li>Reduced O&amp;M planning window</li> </ul>
<b>Performance</b>	<b>Response</b>	<ul style="list-style-type: none"> <li>Automated</li> <li>Self-healing</li> <li>Forecasting/ threat assessment</li> <li>Performance indicators</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance staff training and exercises</li> <li>Energy consumption data collection and predictive analysis</li> <li>Fault Tolerance (controlled cool-down for safe recovery)</li> <li>Incident weather response plans</li> <li>"Smart" control systems with built-in response protocol</li> <li>Documented procedures</li> <li>Condition based maintenance</li> </ul>
	<b>Recovery</b>	<ul style="list-style-type: none"> <li>Standardized components</li> <li>Spares inventory</li> <li>Damage Assessment</li> <li>Prioritization of re-powering</li> </ul>	<ul style="list-style-type: none"> <li>Centralized management of spares</li> <li>Open architecture software</li> <li>COTS parts</li> <li>Portfolio and equipment consolidation</li> <li>Utility coordination and agreements</li> <li>Distributed generation systems</li> </ul>

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When available, the Contract shall review the installations' IEPs and use the Air Force's Resilient Energy Assessment Frame Work Model to identify short (1-4 years) and long-range (5-10 years) plans and feasible COAs for resilience capabilities for the pilot bases to support Mission Resilience Strategies.

### 3.0 FUNCTIONAL REQUIREMENTS

#### 3.1 Electrical Distribution and Airfield Lighting System

The UMP will develop a holistic platform to enable the installations and the enterprise to identify areas of improvement and planning actions to support infrastructure investment for managing electrical built infrastructure to close gaps in the base's capabilities and priorities investments of immediate benefits to minimize risk of utility failures and to ensure reliability of the electrical systems. The Contractor shall provide a comprehensive assessment of the following electrical distribution system as part of the electrical section of the UMP:

- a) Substations
- b) Primary distribution equipment
- c) Government owned power generation station; power plant feeding directly into the primary distribution system
- d) Government owned renewable power generation feeding directly into the primary distribution system (i.e., generators, wind, photovoltaic, etc.)
- e) Utility owned power generation

- f) Distribution lines
- g) Switching stations
- h) Transmission, distribution and service cables
- i) Switchgears
- j) Backup/standby Generators
- k) Light, Beacon
- l) Light, Approach
- m) Obstruction Light
- n) Lighting, Runway
- o) Special Airfield Lighting
- p) Taxiway Lighting.

### **3.1.1 Electrical Systems Unity of Measures (UoMs) and Capacities**

The electrical distribution system at Robins AFB includes approximately 153 miles of primary and secondary lines with ten substations and six power stations. Moody AFB has 1,206 miles of overhead and underground primary and secondary lines, one (1) primary substation and switching station, and five (5) generation facilities.

### **3.1.2 Latest Reports**

The Contractor shall use the latest power system modeling and analysis reports, IEP, Installation Development Plan (IDP) , Real Property Report (7115), to conduct on-site data gathering at all Government owned electrical distribution systems at RAFB and MAFB. The latest Government provided power studies will be five (5) years old or less. These reports typically consists of electrical short circuit analysis and coordination studies performed on the primary distribution system, including facility transformers which are necessary to calculate and determine arc flash potentials, equipment ratings, and settings on downstream equipment within the facility, IAW Air Force Manual (AFMAN) 32-1065, "Grounding & Electrical Systems." ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1065/afman32-1065.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1065/afman32-1065.pdf))

### **3.1.3 System Development Methodology**

The Contractor shall consider all factors, including but not limited to:

- Economics
- Impact of installations electrical infrastructure on systems operations
- Loading limitations
- Contingencies
- Voltage limitations
- Steady state analysis (power flow of the system)
- Fusing/sectionalizing overhead and underground
- Feeder interconnections
- Distribution line constraints
- Distributed generation options/capacity
- Seasonal commitments
- Economic commitments and scheduling of generating units
- Installation substation capacity/total demand
- Load demand/forecast
- Reliability analysis (indices) to inform resourcing decision-making.

### **3.2. MECHANICAL/THERMAL PLANTS AND DISTRIBUTION SYSTEM**

The following is a list of buildings, structures and linear structures for the Thermal Sub Activity Management that should be evaluated under this PWS:

- a) Heating From Central Plant or Combined Heat and Power Plant
- b) Heating Plant
- c) Heating Facility Building
- d) Steam Plant Industrial
- e) Steam Facility Building
- f) Hot Water Mains
- g) Hot Water Pump Station
- h) Steam Heating Mains
- i) Condensate Return Pump Station
- j) Heat Gas Source
- k) Air-Conditioning/Refrigeration Plant
- l) Air Conditioning Plant Over 100 Tons
- m) Chilled Water Exterior Distribution Line
- n) Utility Line Ducts
- o) Utility Door
- p) Utility Vault

All work required under this section shall be done IAW AFMAN 32-1068, "Heating Systems and Unfired Pressure Vessels." ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1068/afman32-1068.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1068/afman32-1068.pdf)).

#### **3.2.1 Mechanical/Thermal UoMs and Capacities**

The thermal systems at Moody AFB consists of one centralized main chiller/boiler plant and three compressed air production buildings with three associated storage tanks. The distribution system has 10.3 miles of steam, chilled water and compressed air lines and ductwork. The thermal plant system at Robins AFB has seven central chiller plants and three centralized boiler plants with three associated storage tanks. The distribution systems consist of 54 miles of chilled water, steam and compressed air distribution lines.

##### **3.2.1.1 System Development Methodology**

The Contractor shall consider all factors, including but not limited to:

- Impacts on installations utility infrastructure and systems operations
- Load requirement versus available capacity
- Contingencies
- Utility service limitations
- Distribution line constraints
- Seasonal commitments

- Boilers, chillers, and steam plants (What do we want them to consider?)
- Primary distribution, pumps, piping, pipe insulation, pipe corrosion protection, balancing/control valves, gauges, and monitoring devices
- Government owned infrastructure thermal plant feeding directly into the primary distribution system
- Distribution lines leak survey
- Investigate base steam trap management program, provide recommendations as applicable
- Investigate potential areas for condensate return
- Evaluate condition of piping insulation
- Economic commitments and scheduling of generating units
- Load demand/forecast
- Backup/standby boilers and chiller requirements, as applicable.

### **3.2.1.2 Thermal Studies**

Due to the non-availability of a thermal plant study for the current bases, the Contactor shall conduct one IAW the PWS to support the development of the UMP. The Contractor shall perform required studies IAW AFMAN 32-1068, "Heating Systems and Unfired Pressure Vessels," and other industry standards, to support the development of the UMP promoting sustainment, restoration, and modernization principles. Existing thermal plant studies performed on the thermal plants and primary distribution systems should be five (5) years old or less.

### **3.3 MECHANICAL/NATURAL GAS PLANTS AND DISTRIBUTION SYSTEM**

The following is a list of buildings, structures and linear structures for the Natural Gas Sub Activity Management that should be evaluated under this PWS:

- a) Gas Compressor Building
- b) Gas Storage
- c) Gas Vaporizer Building
- d) Gas Meter Facility
- e) Gas Mains
- f) Gas Odorizer Facility
- g) Gas Valve Facility

All work required under this section shall be done IAW AFMAN 32-1067, "Water and Fuel Systems" ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1067/afman32-1067.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf))

#### **3.3.1 Mechanical/Natural Gas UoMs and Capacities**

The Natural Gas Distribution System at Robins AFB consists of approximately 113 miles of mains and service lines, one meter and storage facility. The Natural Gas Distribution System at Moody AFB consists of one centralized main meter and storage facility with 11 miles of mains and service lines.

### **3.3.2 System Development Methodology**

The Contractor shall consider all factors, including but not limited to:

- i. Distribution line constraints
- ii. Seasonal commitments
- iii. Primary distribution, pumps, piping, pipe insulation, pipe corrosion protection, balancing/control valves, gauges, and monitoring devices
- iv. Government owned infrastructure feeding directly into the primary distribution system
- v. Distribution lines leak survey
- vi. Impacts on installations utility infrastructure and systems operations
- vii. Load requirement versus available capacity

### **3.3.3 Natural Gas Studies**

Due to the non-availability of a natural gas distribution study for the current bases, the Contractor shall conduct one IAW to the PWS to support the development of the UMP. The Contractor shall perform required studies IAW UFC 3-430-05 “Natural Gas and Liquefied Petroleum Gas (LPG) Distribution Pipelines”, and other industry standards, to support the development of the UMP promoting sustainment, restoration, and modernization principles. Existing studies performed on the natural gas primary distribution systems should be five (5) years old or less.

## **3.4 WASTEWATER DISTRIBUTION SYSTEM**

The following is a list of buildings, structures and linear structures for the Wastewater Sub Activity Management that should be evaluated under this PWS:

- a) Industrial Waste Treatment And Disposal
- b) Industrial Waste Fuel Spill Collection
- c) Sewage Treatment And Disposal
- d) Waste Treatment Building
- e) Sewage Septic Tank
- f) Septic Lagoons - Ponds
- g) Industrial Waste Main
- h) Sanitary Sewage Main
- i) Sanitary Sewage Pump Station

All work required under this section shall be done IAW Air Force Manual (AFMAN) 32-1067, “Water and Fuel Systems” ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1067/afman32-1067.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf)), as well as referencing other federal and industry standards applicable to work required under this PWS, such as the Tri-Service Pavements Working Group (TSPWG) Manual 3-260-03.04-6, “Inspection of Pavement Drainage Systems.”

### **3.4.1 Wastewater UoMs and Capacities**

The wastewater system at Robins AFB consists of 97 miles of collection lines with 50 pump/sift stations and 22KG of industrial and sanitary collection and treatment structures. Moody AFB's wastewater collection system has 35 miles of lines, consists of 23 structures; four seven groundwater extraction and oil separation boxes capable of 1460KG, 14 lift stations and three septic tanks with combined capacities if 60KG. One main treatment plant consists of six building including digesters and chemical processing operations. 35 miles of collection lines.

### **3.4.2 Wastewater Studies**

The Contractor shall conduct an evaluation of the wastewater system to determine and document excessive inflow and infiltration (I&I) conditions and to develop accurate inventory and general condition assessment of the wastewater system assets. Additionally, existing wastewater treatment plant at Robins AFB will require assessment of current influents from base sources and identify potential upgrades and /or retrofits which allow sustained compliance with Federal and State effluent limitations at the most affordable total cost to the Government.

The Contractor shall accomplish the following scope of work tasks:

- a) Manhole and lift station inspections
- b) Smoke and dye testing of wastewater lines (where inflow and infiltration (I&I) is suspected through other processes, 10% maximum)
- c) Selective closed circuit television (CCTV) inspection of wastewater lines (10% maximum)
- d) Development of a wastewater rehabilitation plan
- e) Wastewater treatment plant assessment
- f) Draft and Final Installation Project Reports

### **3.4.3 Inspection / Inventory of Wastewater Assets.**

The Contractor shall develop and conduct an initial data collection site visit at the base. Prior to the site visit, the Contractor shall request necessary documents and electronic files from each base and will conduct a comprehensive review of that data. If data sources cannot be provided, they will be reviewed during site visits. This data will include existing maps, as-built drawings, previous I&I survey data if available, Oil Water Separator Surveys, sanitary sewer overflow (SSO) locations, industrial wastewater surveys, pretreatment management plans, sewer system infrastructure condition studies, discharge permits, GeoBase data, and other documents that may be of value in defining the wastewater system. Additionally, the Contractor will evaluate any and all equipment upgrades, major projects and repairs, and new equipment installation during the previous five years. This data will provide necessary information to define wastewater system sub-basins and provide the base-line wastewater system asset inventory and condition information.

#### **3.4.3.1 Site Evaluation - Data Collection**

The Contractor shall perform site evaluations, as required, to collect supplemental information in areas not sufficiently identified in existing reports. by the base evaluation and available information. Additionally, the Contractor shall physically inspect manholes within the wastewater and industrial collection systems. In order to accurately delineate the

wastewater system, the Contractor shall inspect both sanitary and industrial (if applicable) manholes and associated wastewater lines in an attempt to verify which system they serve and the separation between the two systems, as applicable. The Contractor shall perform a visual inspection of 35% of the total wastewater distribution system, to include manholes. The overall purpose of these inspections is to evaluate the condition of manholes and associated sewer lines, to field-verify sewer sub-basins and the accuracy of existing maps, and to spot check the status of previously completed wastewater rehabilitation work. Physical inspections may be conducted using remote methods such as pole-mounted cameras from the ground surface. Information to be recorded during the manhole survey includes:

- a) Manhole number and any evidence of inflow such as water staining and silt deposition
- b) Any defects in the lid and the concrete collar
- c) The elevation of the manhole lid relative to the surrounding area
- d) Condition of collector and interceptor sewers of 6-inch diameter and larger
- e) Basic data, such as silt build-up, visible infiltration or exfiltration sources, hydrogen sulfide odors, structural damage, cracks, open or offset joints, sag, water marks, root growth, and blockages
- f) Construction materials, pipe size, depth of manhole, depth to invert, depth of flow, and flow direction.

#### **3.4.3.2 Site Evaluation – Infrastructure Validation**

The Contractor shall perform field tasks to validate known and locate/identify all unknown, wastewater system assets. The Contractor shall collect GPS location data (using installation coordinate system), and perform general condition assessment for all assets. Wastewater assets include, at a minimum; wastewater collection and treatment, conveyance infrastructure, manholes, OWSs, septic tanks, grease interceptors, lift stations, and discharge points. The Contractor shall review construction records, as-built drawings, and all existing reports and evaluations and determine data gaps in GeoBase data and asset condition assessments.

#### **3.4.3.3 Maintenance Records**

The Contractor shall meet with Water Shop personnel, and Engineering Technical Support and other appropriate personnel to review maintenance records, identify areas of known problems, and discuss the operation and maintenance of the sanitary collection system. Records associated with any and all equipment upgrades, major projects and repairs, and new equipment installation during the previous five years will be evaluated and included with other updates.

#### **3.4.4 Inflow & Infiltration (I&I) Evaluation**

This PWS defines the requirements for accomplishing inflow and infiltration evaluations to assess the base's compliance with the following I&I standards.

- a. Inflow Standard: Peak Wet Weather Flow will be less than 275 gallons per capita day (gpcd) (40 CFR 35.2120).
- b. Infiltration Standard: Average Daily Wet Weather Flow will be less than 120 gallons per capita day (gpcd) (40 CFR 35.2120).
- c. Peaking Factor in sewer trunk lines will be less than 4.0 (Divide maximum hourly flow measured during rain event by the average daily flow measured during dry weather).



#### **3.4.4.1 Required Work**

Work includes identifying where and to what extent, in the collection system, I&I problem areas exist, and what rehabilitations, repairs, and/or replacements to the system are necessary to bring the system into standard.

This inflow/infiltration analysis is being performed to demonstrate the non-existence or possible existence of excessive inflow/infiltration in each sewer system tributary to the treatment works. Through a systematic investigation of the sewer system, the analysis should identify the presence, flow rate, and type of inflow/infiltration conditions which exist in the sewer system. The systematic investigation should include an analysis of the following which will be provided by the Government as available:

- a) Existing wastewater collection system;
- b) Estimates of average residential, industrial, commercial and institution wastewater flows (which are used for general background but, not usually necessary for I&I determinations);
- c) Groundwater levels should be available from Bases IRP monitoring well data;
- d) Continuous flow monitoring and in some cases flow isolation monitoring;
- e) Determination of inflow and infiltration rates; and recommendations for further investigation when appropriate. Cross-connections to storm water conveyance systems will be enumerated and described.

#### **3.4.4.2 Surveys**

The Contractor shall survey sanitary sewer laterals 4" in diameter or greater, connecting to each building to determine general pipe condition and potential for I&I. Specifically, the Contractor shall evaluate the sewer laterals, via historical service calls, shop personnel interviews, and qualitative information from historical data of building/service calls. The Contractor shall use information developed from flow monitoring/manhole inspection, and smoke / dye testing to develop a prioritized target list for specific investigation of laterals and sewer sub-basin areas. The Contractor shall utilize G-tabs and as-built drawings and personal knowledge of shop personnel, as available, to determine age, size, and composition of sewer lateral piping.

Lateral piping conditions for similar buildings of contemporaneous construction and material may be determined by direct inspection of a representative sample of those building laterals. For example, if a block of buildings built to the same general design, at the same time, are determined to include 10 sewer lateral connections, and direct examination of two of those laterals indicate 4-inch, ceramic piping with open joints discovers pipe cracks, breaks and root intrusion, a similar condition can be assumed for all related laterals constructed in that same period and area without further inspection.

#### **3.4.4.3 Flow Monitoring**

The Contractor shall conduct flow monitoring of the sanitary and industrial sewer systems for a minimum duration of 60-days during time-periods which have the greatest chance of significant rainfall events (at least 1-inch rainfall). The Contractor may utilize area-velocity flow meters in gravity sewer lines, lift station pump cycle records, and/or information captured downstream in

main sub-basin flow monitoring. Installation of flow meters shall also be positioned at ends of pipes in outfall manholes in at least 12 locations. Flow data shall be used to identify areas with potential for significant I&I issues or other illicit discharge. Should the flow monitoring data indicate significant I&I problems those areas or sub-basins shall be further investigated. To the extent that site conditions allow it, the Contractor shall attempt to meter in the same locations that were metered during the previous I&I study (if applicable) so that comparisons can be made to previous flow data. However, the Contractor shall perform field reconnaissance to field-verify sub-basins and potential meter locations and select the number and location of metering sites that is most appropriate to accomplish the objectives of this SOW. The Contractor shall evaluate historical rainfall patterns and perform flow metering during a season in which it can be expected to capture periods of both dry weather and wet weather. If necessary, the Contractor shall accommodate drought conditions by extending the 60-day monitoring of flow meters.

The Contractor shall be responsible for all flow measurement device maintenance and data collection, including calibration and measurement device cleaning. Routine maintenance shall be performed, and recorded flow shall be logged, along with other significant information. For each flow monitoring site, the Contractor shall develop a weekly hydrograph, with any rainfall data superimposed thereon.

The Contractor shall collect data regarding wastewater flows, rainfall, and potable water consumption. The Contractor shall utilize this data to assist in determining at minimum the following flow components:

- a) Base flow (water consumed and discharged to the sanitary sewer system)
- b) Effective population and rate of consumption (gpcd)
- c) Peak hydraulic flow (peak hour and peak day)
- d) Average daily wet weather flow
- e) Peak wet weather flow
- f) Peaking factor (maximum hourly flow measured during rain event divided by the average daily flow measured during dry weather)
- g) I&I

#### **3.4.4.4 Inspection Methods**

CCTV inspection will be based on data gathered by visual inspection, flow monitoring, smoke and dye testing, SSO locations and empirical information. It is estimated that the Contractor will be required to hydraulically clean and perform CCTV inspections, IAW the listed standards or the regulatory-approved equivalent, of not to exceed 10% of total wastewater mains. The CCTV inspection will identify structural pipeline defects, cracks, offset joints, obstructions, grade problems, and sources of groundwater infiltration and escaping sewage. CCTV inspection recordings shall be clearly marked, identifying the exact line inspected. Damaged sections of line revealed by the inspections should be identified through detailed narrations and descriptions. Defects observed in each line segment should be summarized on a CCTV inspection line. Digital photographs should be taken in line segments to show typical defects and conditions of that line.

#### **3.4.4.5 Rehabilitation Plan**

The Rehabilitation Plan will present recommendations for correcting any significant I&I problems encountered during the study and include a draft DD Form 1391 document(s) for the construction of recommended corrective actions. The rehabilitation plan will include a detailed report including prioritization of the problem areas in tabular form, the location and identification of I&I problems along with a description of all violations of local, state, or federal regulations, quantity of wastewater line and the number of manholes requiring repair or replacement, and estimated costs for rehabilitation. Rehabilitation recommendations shall be based on costs, anticipated success ratios, wastewater removal rates and longevity of each repair method or combination of methods as appropriate. Identify alternatives considered and provide justification for the repair methods selected. Potential repair methods to be evaluated shall include, but not be limited to joint sealing, slip lining, insertion lining, point repairs, inflow source disconnections, soil stabilization, fold and form, line replacement, and pipe bursting. All sections of wastewater lines found in noncompliance of local, state, and federal regulations will be recommended for rehabilitation.

A programming-level construction cost estimate will be prepared for each segment of the work and for each corrective action so that programming decisions can be made. Costs shall be based on past experience and local conditions and shall be developed in tabular form to take into account line size, materials of construction, and approximate depths of pipes. Cost estimates should be quantified to major components and systems sufficient to support the preparation of costs estimates to be included in the draft DD Form 1391. Document additional costs incurred due to the excessive I&I condition and estimate in coordination with the COR the intangible costs because of the excessive I&I. Using the direct and intangible costs develop return on investment calculations for the project and phases using simple payback (no interest) methods.

#### **3.4.5 Other Applicable Laws and Regulations Documents**

- a) Sewer System Infrastructure Analysis and Rehabilitation, U.S. Environmental Protection Agency document EPA/625/6-91/030, dated Oct 1991.
- b) Existing Sewer Evaluation and Rehabilitation, American Society of Civil Engineers (ASCE), and Water Pollution Control Federation (WPCF), 1983.

### **3.5 WATER DISTRIBUTION SYSTEM**

The following is a list of buildings, structures and linear structures for the Water Sub Activity Management that should be evaluated under this PWS:

- a) Water Supply Mains
- b) Commercial Water Supply
- c) Surface Water Supply
- d) Water Supply Treatment Facility
- e) Water Well
- f) Water Supply Building
- g) Water Storage Reservoir
- h) Water Tank Storage

- i) Water Distribution Mains
- j) Water Pump Station
- k) Fire Protection Water
- l) Reservoirs - Fire Protection Water
- m) Fire Protection Water Mains
- n) Water Fire Pumping Station
- o) Fire Protection Water Storage
- p) Water Supply Storage, Non-Potable
- q) Water Supply Non-Potable
- r) Water Supply Non-Potable Building
- s) Water Supply Main Non-Potable

All work required under this section shall be done IAW Air Force Manual (AFMAN) 32-1067, "Water and Fuel Systems." ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1067/afman32-1067.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf)).

### **3.5.1 Water Systems UoMs and Capacities**

The water system at Robins AFB consists of 66 pumping stations four fire protection and eight main water wells and storage twelve tanks with a combined capacity of 4.24MG, 15 meter and control buildings and one IMG Reservoir. The distribution system is made up of 58 miles of mains.

The water system at Moody AFB has a one main non-potable reservoir retaining IMG and six main water wells. Three towers provide 484KG of water supply with two main pumping stations and five supply and treatment buildings. The distribution network has 57miles of fire protection and potable distribution piping.

### **3.5.2 Latest Reports**

The Contractor shall use the latest water system modeling and analysis reports, Installation Energy Plans (IEPs), Installation Development Plan (IDPs), Utility Investment Plan (UIPs), Real Property Report (7115), district plans performed for the installation to conduct on-site data gathering at AF installations of all Government-owned water distribution systems at Active Duty bases that are not segmented, or projected for privatization to segment electrical linear distribution lines.

### **3.5.3 Water Studies**

The Contractor shall create and/or update a graphical water distribution system model for the installation identified under this TO. This model will be used for hydraulic analysis of each base's drinking water distribution system. The Contractor shall prepare the models and provide optimization recommendations based on simulation runs using the H2OMAP Model Program or approved equal. The Contractor shall review existing water utilities studies, current GeoDatabases (GDBs) and other related water source material to support our objective in developing a comprehensive Utilities Management Plans for Utility Distribution Systems across the Air Force Civil Engineering Enterprise; using Robins and Moody AFB as the pilot installations. Following are additional services the Contractor shall perform for the water distribution systems:

- a) Collect and utilize field data to update and calibrate the existing hydraulic model.
- b) Estimate fire flow requirements at select buildings on Base and use the calibrated hydraulic model to evaluate the capacity of the water system to meet fire flow requirements.
- c) Develop a unidirectional flushing plan (UDF) and provide valve and hydrant exercising sequences to achieve adequate scouring velocities in 6-inch or greater water mains. UDF Plans will be delivered under a separate document.
- d) Develop and conduct training at Tyndall AFB to inform personnel of the nature and use of the water system model and provide instruction on operation of the calibrated model.
- e) Provide a water system evaluation report including data collected during field testing, summary of calibration of hydraulic model, and fire flow evaluation results.
- f) Provide water quality sampling to determine levels of disinfectant residuals throughout the distribution system and determine if any regulated contaminants are present in the system.

#### **3.5.3.1 Calibrated Hydraulic Model Preparation & Evaluation**

The Contractor shall develop a calibrated hydraulic model for the base using the latest version of H2OMAP or approved equal, which shall reflect all water system components. The Contractor shall develop the hydraulic models to reflect the distribution system facilities and operations. Demands will be identified and allocated to new model junctions representing each building that has water use. Fire flow demands will be assigned to junctions that represent fire hydrants. Any information regarding pumps, pump operation, tanks including operational settings, valve locations and settings/operation, etc. will be obtained from interviews with water system operations staff and on-site data collection. If the base has an existing hydraulic model and/or Supervisory Control and Data Acquisition (SCADA) system, that information will be provided for the Contractor's use.

If a previous hydraulic model is provided by the base, the Contractor shall review the existing model input data and update the hydraulic model to reflect changes made to the distribution system facilities and operation. It is the Government intent that all models are of the same type and manufacturer for ease of maintenance and operations. Addition of new facilities will be based on as-built information supplied by the base. Any items such as pumps or tanks that have been replaced or removed will be updated in the model. During the site investigations, the Contractor shall perform field tests to measure flows, peaking factors and pressures under various demand conditions. Field tests to determine water age shall also be conducted. These measurements shall be throughout the system at no fewer than 20 locations per system. Tank depletions during the maximum hour should be checked against tank capacities. If available, flow, peaking factors and tank level data will be gathered from the SCADA system. The hydraulic model shall be calibrated based on these field tests.

Model test results data shall be evaluated and summarized by the Contractor. Pump test data points shall be compared to pump curves in the model. Pump curves in the model shall be adjusted, if necessary. Computer model simulations or scenarios shall be developed for each

of the fire flow calibration tests. Model results from the calibration simulations shall be compared with the field data and measured against the calibration criteria. The distribution systems shall be evaluated to determine their capacities to deliver water under peak demand, normal demand, and fire flow conditions. The following model scenarios, at a minimum, shall be run and evaluated:

- 24-hour Maximum Day Demands (evaluated at peak hour).
- Average of Maximum Day Demand plus Fire Flow (evaluated at each hydrant and fire suppression system connection).
- Storage and supply capacities shall also be reviewed to see that they meet operational and regulatory requirements. Any deficiencies in the distribution system shall be identified.
- Identification of potentially vulnerable portions of the system during emergency situations like major power failures, transmission main failures or contamination.
- Unidirectional flow process sequence and locations
- Evaluation of the water age and pressure of water in the distribution system. Locations that do not meet the water age criteria and pressure minimums shall be identified.
- Water system modifications that are in the planning or design stages scheduled within the next two years shall be reviewed (a maximum of three scenarios will be evaluated per base). The Contractor shall evaluate the hydraulic implications of the planned modification scenarios and provide recommendations based on the model outputs. Factors that should be addressed relative to the planned activity are adequate fire flow, distribution main sizing, pressure implications, and similar critical items to maintaining a full operational and environmental compliant drinking water system.

### **3.5.3.2 Hydraulic Model and System Evaluation Technical Report**

The Contractor shall prepare a Hydraulic Model and System Evaluation Technical Report for the base that documents the methodology and results of the model. The purpose of this report is to review the model set-up, system parameters, model methodology, model results, a report on the results of the scenarios from Task 3, and optimization recommendations for the water distribution system. The Contractor shall include in the report a chapter on return-on-investment (ROI) estimates should the installation implement all recommendations of the technical report. The intent of the ROI chapter is to evaluate the potential savings, cost avoidance, and benefits of operating a calibrated drinking water system hydraulic model. Include data completed for all updates to the GeoBase data, scenarios per Task 3, and other data completed.

## **3.6 STORM WATER DISTRIBUTION SYSTEM**

The following is a list of buildings, structures and linear structures for the Storm Water Sub Activity Management that should be evaluated under this PWS:

- a) Water Storage Dam
- b) Storm Water Pond
- c) Drainage Ditch
- d) Storm Drainage Disposal

- e) Storm Drainage Pumping Station
- f) Dyke / Dam
- g) Dikes

All work required under this section shall be done IAW Air Force Manual (AFMAN) 32-1067, “Water and Fuel Systems” ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1067/afman32-1067.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf)), as well as referencing other federal and industry standards applicable to work required under this PWS, such as the Tri-Service Pavements Working Group (TSPWG) Manual 3-260-03.04-6, “Inspection of Pavement Drainage Systems.”

### **3.6.1 Storm Water UoMs and Capacities**

Storm Water and drainage system at Robins AFB is made up of one main pumping station, four retaining walls and two dams. The collection system consists of 91.8 miles of piping network. Moody AFB has 39 miles of storm water collection piping and 6 six retaining walls and one main pumping structure.

### **3.6.2 Drainage Studies**

The Contractor shall provide all necessary personnel, facilities, equipment, and materials to complete the following tasks:

- a. Review existing utilities studies, current GeoDatabases (GDBs) and other required source material for the storm water system in developing the comprehensive Utilities Management Plan at Robins and Moody AFBs.
- b. Provide an overall compliance assessment of storm water systems, including development of an accurate inventory and general condition assessment of storm water system assets, areas inflow-infiltration analysis, and application for compliance and O&M management tools, methods, and processes at the base.
- c. Comply with all applicable federal, state, and local environmental statutes, instructions, manuals, handbooks, regulations, guidance, and policy letters. The Contractor shall also consider all applicable Environmental Protection Agency (EPA) Clean Water Act regulations.

### **3.6.3 Base Data Evaluations**

Prior to the site visit, the Contractor shall request necessary documents and electronic files from the base and conduct a comprehensive review of that data. If data sources cannot be provided, the contractor and base personnel will be reviewed the missing data source during the site visit. This data will include existing maps, as-built drawings, discharge permits, GeoBase, and other documents that may be of value in defining the storm water system. This data will provide necessary information to define storm water system sub-basins and provide the base-line storm water system asset inventory and condition information. Discussions with base GIS personnel will be required to determine adherence to current Air Force (AF) data IAW Attachment 3, “SMS – Utilities Guidance: Business Rules for Utilities Segmentation.”

The Contractor shall evaluate data and current GeoBase storm water system data-layers for

existing accuracy, detail, and meta-data file content. The Contractor shall perform a data-gap analysis which will determine recommendations for additional data update, development, or improvement.

### **3.6.4 Site Visit**

The Contractor shall perform site visit to collect information required as part of this PWS.

#### **3.6.4.1 Site Visit – Infrastructure Validation**

The Contractor shall perform field tasks to validate known and locate/identify all unknown, storm water system assets. The Contractor shall collect Global Positioning Satellite (GPS) location data (using installation coordinate system) including but not limited to rim and flow line elevations. Storm water assets include, at a minimum; storm water collection and conveyance infrastructure, manholes, culverts, retention/detention ponds, and discharge points. This validation shall be used to update the GeoBase layers.

#### **3.6.4.2 Site Visit – Maintenance Records**

The Contractor shall meet with Shop personnel, and Engineering Technical Support and other appropriate personnel to review maintenance records, identify areas of known problems, and discuss the operation and maintenance of the distribution system.

- No confined space entry will be required during data collection activities for these infrastructure components.
- Dye/smoke testing shall be conducted as necessary to define sewer line connections and potential storm water / wastewater cross-connections. The Contractor shall measure the invert of the storm pipe at each manhole as measured down from the manhole rim and provide in the report. Measurements of manhole inverts and piping shall be conducted from the surface.
- Using installation-provided Geographical Information System (GIS) data or maps/drawings, the Contractor shall locate existing GeoBase attributes for lift stations, flow monitor and meter stations, and detention/retention ponds. The Contractor shall then add new features where applicable and update the data.
- A listing of all known and newly identified assets shall be provided which includes location and condition will be included in the Installation Project Report.

#### **3.6.4.3 Reconcile/Update GeoBase Storm Water Layers**

The Contractor shall evaluate utility shop working maps, GeoBase storm water system maps, real property records, and previous I&I surveys for inconsistencies. The Contractor shall utilize all existing and developed data to bring the GeoBase storm water system map and data into the most accurate and complete state possible. The Contractor may utilize methodology or modifications to achieve the highest level of accuracy and completeness and provide the spatial data in the format provided IAW linear segmentation guidance.

#### **3.6.4.4 Maps**

Physically overlay the Utility maps and Survey maps over the GeoBase data files at the same scale. Review the mapping and identify inconsistent data including:



- a) New or missing pipes, manholes
- b) Pipes and manholes with different alignments (e.g. located on opposite side of street).
- c) Pipes with different data, including diameter, material, age
- d) Pipe connections shown differently
- e) The level of accuracy of the mapping effort shall meet 0.0-1.5 feet of the attribute identified.
- f) Use newly developed GPS coordinates of manholes, etc. to check and reconcile accuracy of GeoBase map. Newly surveyed data shall meet a level of accuracy of 0.0-1.5 feet

Based on initial review, decide which mapping should be used as a starting point for updated mapping via GeoBase data. In each data file add some form of metadata (information describing the data) noting the original source of data for all data files. For instance, a note could be added to a field set for metadata stating “The source of data is from the GeoBase database dated January 15, 2000, the specific source of data used to develop the GeoBase is unknown.”

When reviewing inconsistencies between mapping data, decisions will be made regarding which data is most reliable. Either the GeoBase data will remain, or will be overwritten with other information. If overwritten, the metadata will be changed to indicate when it was overwritten and why. For example, the metadata field for an 8-inch water main may read “Mapped diameter of this pipe changed from 12” to 8.” Storm water replacement as-built drawings dated 01 June 2002” indicated 8” pipe. Inspections of Manholes 432 and 433 conducted 26 October 2008 confirmed the pipe size.”

Review survey data based on conclusions resulting from field testing information and discuss proposed changes with Shop personnel and Engineering Technical Support to edit GeoBase appropriately.

#### **3.6.4.5 Shop Review**

Meet with Shop personnel, and Engineering Technical Support and other appropriate personnel to review:

- a) Each pipe in GeoBase to determine if errors can be identified and changed.
- b) Coordinate with base personnel to develop a procedure for reviewing changes, approving changes and for overwriting the storm water system GeoBase data.
- c) Coordinate with base personnel to develop a procedure for reviewing changes, approving changes and for overwriting the storm water system GeoBase data.

The Contractor shall assist GeoBase managers with the overwriting process to revise/update the GeoBase map, additional attribute data files, and metadata files to enhance GeoBase capability as a storm water system management tool. Integral to GeoBase optimization, the Contractor shall develop GeoBase data/map layers for blockages, and/or other Key Performance Indicator (KPI) tracking tools.

A follow up site visit shall be conducted for additional data gathering, finalizing GeoBase attribute tables and updates, and coordinating updates and management tools with base POCs.

A report summarizing the actions taken to update the GIS layers shall be provided in the Installation Project Report.

#### **3.6.4.6 Wastewater Line Inspection**

The Contractor shall perform a visual inspection of sewer lines adjacent to manholes, for each location as listed:

- a) Robins AFB, approximately 35% of the total linear wastewater distribution system.
- b) Moody AFB, approximately 35% of the total linear wastewater distribution system.

The Contractor shall perform still-photography surveys of piping using “QuickView” (or similar) pole-mounted wastewater inspection cameras. Smoke and/or dye surveys may also be utilized to pinpoint problem areas otherwise identified by field survey activities. All pipes, outfalls and manholes inspected shall have Additional/Non-SDSFIE (Spatial Data Standards for Facilities Infrastructure and Environment) fields filled in and verification of existing fields. A listing and/or drawing of lines inspected will be included in the Installation Project Report.

#### **3.6.4.7 Photo Documentation**

Include photo documentation of all assets under investigation, field activities, and sample locations. Photography of any kind must be coordinated through the installation, customer, or facility Point of Contact (POC). The Contractor shall digitally photograph each manhole and adjacent line during the physical inspection. Images will include above ground location photo, a photo of the trough with north being up, and photos looking up each incoming and down each outgoing line. Each image will be properly annotated and presented in the final report. All physical inspection data and photographs will be put into an electronic database that is linked within GeoBase to the correct segment or node. This will facilitate quality control checks, allow visual identification of segment or node, and reduce the cost of data analysis.

#### **3.6.4.8 Modeling the Storm Water Distribution System**

The Contractor shall create a hydraulic model using H2OMAP SWMM latest version or approved equal software package available to be used on the Air Force Network. Information regarding lift station pump operation and valve settings shall be obtained from supervisory control and data acquisition (SCADA) settings and interviews with storm water system operations staff.

The hydrologic modeling shall be used to calculate and verify existing and future flow conditions. Hydraulic models shall be utilized to analyze flow conditions for existing and future conditions. Specifically, the effort shall include:

- a) Analyze the existing system’s ability to accommodate a 10-year and 25-year design storm under existing conditions.
- b) Model the future conditions based on plans for future facilities per the 2030 Base Comprehensive plan. Analyzing the existing system’s ability to accommodate the

- future conditions during a 25-year design storm.
- c) Model system improvements needed to meet a 25-year and 100-year design storm and perform alternate analysis as appropriate for these conditions.

System improvements shall conform to the criteria outlined in:

- a) UFC 3-201-01: Civil Engineering
- b) ETL 03-1: Storm Water Construction Standards
- c) Where applicable, the state and local codes and regulations

### **3.7 FUELS/PETROLEUM OILS AND LUBRICANT (POL) DISTRIBUTION SYSTEMS**

The following is a list of buildings, structures and linear structures for the Fuels and POLs Sub Activity Management that should be evaluated under this PWS:

- a) Aviation Fuel Dispensing
- b) Hydrant Fueling System
- c) Marine Fuel Dispensing System
- d) Operating Storage, Aviation Gas
- e) Operating Storage, Aviation Lubricant
- f) Operating Storage, Diesel
- g) Operating Storage, Jet Fuel
- h) Operating Storage, Motor Gas
- i) Operating Storage, Solvents
- j) Operating Storage, Special Fuels
- k) Operating Storage E-85 Ethanol
- l) Operating Storage Bio-Diesel
- m) Operating Storage Diesel Jp-8
- n) Pol Piping System, Within a Site
- o) Pipeline, Liquid Fuels
- p) Pump Station, Liquid Fuel
- q) Liquid Fuel Truck Fill Stand
- r) Liquid Fuel Stand, Unloading
- s) Aviation Gas Storage
- t) Diesel Fuel Storage
- u) Jet Fuel Storage
- v) Storage Motor Gas
- w) Liquid Fuel Storage, Large Bulk (Larger Than 100,000 Barrels)
- x) Cut-And-Cover Bulk Liquid Fuel Storage
- y) Heating Fuel Oil Storage

All work required under this section shall be done IAW Air Force Manual (AFMAN) 32-1067, "Water and Fuel Systems" ([https://static.e-publishing.af.mil/production/1/af\\_a4/publication/afman32-1067/afman32-1067.pdf](https://static.e-publishing.af.mil/production/1/af_a4/publication/afman32-1067/afman32-1067.pdf)).

### **3.7.1 Fuels Systems UoMs and Capacities**

Moody's Fuels Storage and distribution system consists of one million gallons of operational storage and associated pump facility, 56KG of CE and AGE storage with three service stations and eight outlets. Six operations buildings manage the storage and distribution lines consisting of 4.2K linear feet of pipelines. Robins' combined operations fuels consist of 9.14 MG of fuels, solvents and specialty liquid storage, supplying 10 hydrant systems and 18 truck stands managed by four hydrant pump buildings and two specially fuel management facilities. The CE operational fuels stores 10.2 MG of diesel, gasoline and heat oil with 13 outlets at four main fueling stations. Eleven operations buildings manage storage and distribution of all fuels including 12.3 miles of pipelines and a total of 41 outlets

### **3.7.2 Latest Reports**

The Contractor shall use the latest studies, modeling and analysis reports, installation energy plans (IEPs), installation development plan (IDPs), to conduct on-site data gathering at AF installations of all Air Force owned fuels distribution systems at Active Duty bases that are not segmented. The AF requires contract support to analyze fuel systems and provide Government with an understanding of the current state of infrastructure systems.

### **3.7.3 Fuels Studies**

The Contractor shall perform required studies IAW AFMAN 32-1067 "Water and Fuel Systems", and other industry standards, to support the development of the UMP promoting sustainment, restoration, and modernization principles. Fuel storage and distribution systems at AF installations of all Air Force owned fuels distribution systems at Active Duty bases that are not segmented, or projected for privatization to segment linear distribution lines are to be included.

## **4.0 IMPLEMENTATION PROCESS STEPS FOR PWS REQUIREMENTS**

The following steps provide a process outlining the procedures developed by AFCEC to perform data collections for the Air Force to the PWS, unless stated otherwise. The Contractor shall be required to support AFCEC/COAU during the following steps:

### **4.1 Base Visit Schedule (Step 1)**

The Contractor shall develop a base visit schedule to accomplish the PWS at the installation(s) identified in the PWS. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.2 Initial Contact with Installation; Pre-Planning Meeting (Step 2)**

The Contractor shall establish contact with the COR and installation Point of Contact (POC), and hold a Pre-Planning Meeting, NLT three (3) calendar days after award. Record of Meeting is due to COR and installation POC two (2) calendar days after Pre-Planning Meeting. As a minimum the Record of Meeting shall include: date of meeting, list of participants, summary of items discussed, and any other pertinent data. Installation POC(s) shall be provided by Government upon award. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.3 Review of Installation Security Requirements (Step 3)**

The Contractor, with the base POC, shall review the security requirements for building access. Any security approvals, escorts, or access badges shall be acquired by the Contractor. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.4 Coordination of Visit with Installation POC; Pre-Visit Meeting (Step 4)**

The Contractor shall coordinate / schedule site visit with COR and installation POC no later than seven (7) calendar days after award of PWS. Pre-Visit Meeting should discuss pending site visit schedule, key site visit participants from the installation and Contractor team, and request pertinent information to include: special security access, escort requirements / controlled areas, hours of operation, safety issues, photographic restrictions, as-built drawings, and utility maintenance records. The Contractor reviews this data, asks any clarifying questions, and determines if there are assets that may need to be inventoried or added to the Real Property Inventory Database (RPID). Record of Meeting is due to the COR and Installation POC two (2) calendar after Pre-Visit Meeting. Result of Pre-Visit Meeting will be a Work Action Plan for the site visit; see paragraph 8.2.1. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.5 Development of Work Action Plan (WAP) (Step 5)**

The Contractor, in concert with the base POC, will develop a logical Work Action Plan to identify which utilities will be visited each day and the date/time of each visit throughout the assessment period. The Contractor shall deliver WAP to the CO and COR within twenty-one (21) calendar days following award. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.6 Review of WAP with Installation / COR (Step 6)**

The Contractor, in concert with the base POC, will review the WAP. If there are utilities with complete and current assessments identified to be accomplished in the PWS, the Contractor shall not reassess those utilities and note their removal from the list within the Installation Trip Reports. (Reference: PWS, Para. 8.2.5) COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **4.7 Site Visit In-Brief (Step 7)**

Prior to beginning the data collection and data validation efforts, the Contractor shall provide an In-Brief to base personnel to inform them of the activities that will take place. The Contractor shall coordinate with the base POC to schedule the In-Brief. Attendees to the In-Brief may include: AFCEC/COAU, Base Civil Engineer, Deputy Base Civil Engineer, Chief of Operations, Chief of Engineering, members of Operations and Engineering Flights, and the Installation Real Property Officer. Some attendees may opt to attend via telecom. The Contractor shall document attendance of In-Brief, and include the information in the Trip Report. The Contractor shall coordinate with the COR on each In-Brief presentation prior to delivering it to the installation(s) identified in the PWS. In-Brief Meeting Report is due to the COR and Installation POC seven (7) calendar days before In-Brief and site visits. The In-Brief, Record of Meeting is due one (1)

calendar day after the In-Brief. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

#### **4.8 Documentation of Data Anomalies and Reconciliation (Step 8)**

The Contractor shall note all data anomalies and how they were reconciled. Reconciliation shall show the original information, what changed, how the change was addressed, and any comments regarding the Real Property item in regards to discussions with base personnel and/or efforts to correct the anomaly.

#### **4.9 Site Visit Out-Brief (Step 9)**

After completing data collection and validation, the Contractor shall notify the COR and base POC. The Contractor shall provide an Out-Brief to base CES personnel to inform them of the activities that have taken place. The Contractor shall coordinate with the base POC to schedule the Out-Brief. It is expected that the attendees will be the same as those that were present in the In-Brief. The Contractor shall document attendance and include the information in the Trip Report. The Contractor shall coordinate with the COR on each Out-Brief presentation prior to delivering it to the bases. The Out-Brief Meeting Report is due one calendar (1) day before Out-Brief. The Out-Brief, Record of Meeting is due three (3) calendar days after the Out-Brief. COR and Installation POC (customer) will monitor accomplishment. No more than five (5) substantiated customer complaints allowed.

### **5.0 PROGRAM MANAGEMENT**

#### **5.1 General Requirements**

##### **5.1.1 Program Manager (PM)**

The Contractor shall provide a PM (point of contact) who is responsible for program management of the Utilities Management Plan PWS. The Contractor PM shall work with the Contracting Officer's Representative (COR) (AFCEC/COAU) on all TO issues.

##### **5.1.2 Notification of Work Out of Scope**

The Contractor shall immediately notify the CO and COR if anyone besides the CO and COR have directed the contractor to perform scope outside the PWS.

##### **5.1.3 Program Management Reviews (PMR)**

The Contractor shall meet periodically with the CO, COR and Installation POC to review performance via Program Management Reviews (PMRs). PMRs may be held weekly, but not less than monthly. The PMRs shall cover status and feedback on performance measures, Contractor performance, and any significant events. The PM shall provide meeting minutes to the CO and the COR. The CO and COR will provide written notice to the PM identifying any areas of non-concurrence.

##### **5.1.4 Notification of Program Management Problems and Deficiencies**

The Contractor shall identify, document, and notify the CO and COR of actual or potential Contractor program management problems and deficiencies. The Contractor shall also perform corrective actions for all identified Contractor program management problems and deficiencies.

## **5.2 Schedule**

Contractor shall adhere to all scheduled timelines, milestones, delivery schedules, and administrative requirements to include scheduled on-time delivery of reports, data products, billing invoices, staffing of personnel, and action item completion.

## **5.3 Contractor Furnished Equipment, Supplies, and Services**

Except for those items or services specifically stated in the PWS as Government furnished, Contractor shall furnish the required equipment, supplies, and services needed to perform the contract.

## **5.4 Government Notification of Employee Departure from Contract**

The Contractor shall notify the CO and COR (via telephone contact and e-mail) within twenty-four (24) hours an employee no longer works on a project for which he/she had been granted Government computer access.

## **5.5 Training**

The Contract Manager (CM) shall ensure all employees possess the skills and experience necessary to support the requirements of this TO as stated in the PWS. The Government will not pay for training necessary to meet requirements awarded under this TO. The Contractor shall be solely responsible for all cost incurred to meet training requirements and shall not charge the Government, this TO, or any other Government contract for necessary training.

## **5.6 Government Team Members**

### **5.6.1 Government Multi-Functional Team**

The Government will identify specific names, addresses, phone numbers and e-mail addresses of the Government team at the PWS level as follows:

Contracting Officer (CO) and Contract Administrator (CA)  
772d Enterprise Sourcing Squadron (772 ESS/PKD)  
139 Barnes Drive, Suite 1, Tyndall AFB, FL 32403

Contracting Officer's Representative (COR)  
Air Force Civil Engineer Center (AFCEC/COAF)  
139 Barnes Drive, Suite 1, Tyndall AFB, FL 32403

### **5.6.2 Contracting Officer (CO)**

The Government official with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The CO is the only person authorized to direct the Contractor, make changes to the TO.

### **5.6.3 Contract Administrator (CA)**

The Government official who accomplishes TO and PWS administration duties such as

preparing required documentation and communicating with the Contractor on behalf of the CO.

**5.6.4 Contracting Officer’s Representative (COR)**

The COR is the Government official nominated by the AFCEC Asset Visibility Division Chief (AFCEC/COA). The Contractor shall receive a copy of the written COR designation upon award of the contract. The COR shall provide technical assistance and clarification required for the performance of this task and shall provide technical evaluations as required.

**6.0 MANAGING CONTRACTOR PERFORMANCE**

**6.1 Example Services Summary (SS)**

The Services Summary summarizes the most important performance objectives and performance thresholds (specific standards) as identified within the body of the PWS. The Contractor’s performance shall be assessed monthly by a process that measures success towards achieving defined performance objectives listed in the SS. The SS will be IAW AFI 63-101, Acquisition and Sustainment Life Cycle Management, AFI 63-138, Acquisition of Services and Federal Acquisition Regulations (FAR) Subpart 37.6, Performance-Based Acquisition. Note that the SS does not identify every service required, but those services considered most important for mission accomplishment. The absence of any performance objective and threshold from the SS shall not detract from its enforceability nor limit the rights or remedies of the Government under any provision of the contract.

<b>Table-3 Services Summary</b>			
<b>Performance Objective (PO)</b>	<b>PWS Paragraph(s)</b>	<b>Performance Threshold</b>	<b>Method of Surveillance</b>
PO1: Safety	PWS x.x.x	Contractor shall have zero safety violations per installation.	Customer Feedback
PO2: Draft report submitted as required	PWS x.x	100% Compliance	100% Inspection
PO3: Provide Final Reports, and all Content, in Appropriate Format	PWS x.x	100% Compliance	100% Inspection

**6.2 Quality Assurance**

The Government will evaluate performance of the services listed in the SS to determine if they meet the performance thresholds.

**6.3 Performance Assessment Report (PAR)**

The Government will assess the quality of each of the following: Quality of Product or Service;



Schedule; Cost Control; Business Relations and Management of Key Personnel.

#### **6.4 Quality of Product or Service**

Assess the Contractor's conformance to TO requirements, specifications and standards of good workmanship (e.g., specified technical, quality control, and safety/health standards). For example:

- a. The service provided shall meet the specifications of the contract. No more than twenty (20) correctable errors in inventory updates.
- b. The reports/data shall be accurate. No more than ten (10) correctable errors allowed.
- c. The Contractor shall not duplicate utility records. No more than twenty (20) correctable errors allowed.
- d. The Contractor shall conform to the approved quality control (QC) plan? No more than ten (10) noted errors in QC execution.
- e. The Contractor shall conform to the approved safety/health plan. No more than five (5) customer complaints on the TO.

#### **6.5 Schedule**

Assess the timeliness of the Contractor against the completion of the TO, milestones, delivery schedules, and administrative requirements (e.g., efforts that contribute to or effect the schedule variance). Instances of adverse actions are indicators of problems which may have resulted in variance to the TO schedule, and should be noted. The assessment of liquidated damages; or issuance of Cure Notices; or issuance of Show Cause Notices; or issuance of Delinquency Notices are indicators of problems which may have resulted in variance to the TO schedule and should therefore be noted in the evaluation.

- a. The Contractor shall meet scheduled on-time delivery of Records of Meetings, Trip Reports, and Installation Status Reports. No more than three (3) late reports/Records of Meeting.
- b. The Contractor shall meet scheduled on-time delivery of draft and or final data products. No more than three (3) late data products.
- c. The Contractor shall meet scheduled on-time delivery of billing invoices. No more than three (3) late billing invoices per year.

#### **6.6 Business Relations**

Assess the integration and coordination of all activity needed to execute the contract. For example:

- a. The Contractor shall perform PWS completion within performance period requirements, and should adhere to schedule.
- b. The Contractor shall identify problems during inventory/assessment.
- c. The Contractor shall resolve issues in controversy.
- d. The Contractor shall exhibit reasonable and cooperative behavior. No more than five (5) customer complaints per year.

#### **6.7 Management of Key Personnel**

Assess the Contractor's performance in selecting, retaining, supporting, and replacing, when necessary, key personnel. For example:

- a. The Contractor shall match the qualifications of the key positions, as described in the contract, with the person(s) who fill the key position during accomplishment of PWS. No more than five (5) substantiated customer complaints allowed per year.
- b. The Contractor shall take action and correct the performance if a key person does not perform well. No more than five (5) substantiated customer complaints allowed per year.
- c. If a replacement of a key person is necessary, the replacement shall meet or exceed the qualifications of the position as described in the TO schedule. No more than five (5) substantiated customer complaints allowed per year.

**7.0 GENERAL INFORMATION**

**7.1 Change/Deviations**

The assigned 772 ESS/PKD Contracting Officer is the only individual authorized to issue changes to this PWS. PWS awarded under this TO are to be managed by the issuing contracting office with an approved Delegation of Procurement Authority.

**7.2 Duty Hours**

For information purposes, normal Government duty hours are 0800-1700 unless otherwise stated in the PWS.

**7.3 Place of Performance**

The place of performance may include selected AFB facilities identified in this PWS.

**7.4 Legal Holidays**

The following Federal holidays are observed under this TO:

<u>Holidays</u>	<u>Dates</u>
New Year's Day	1 January
Martin Luther King's Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Juneteenth	19 June
Independence Day	4 July
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veteran's Day	11 November
Thanksgiving Day	Fourth Thursday in November
Christmas Day	25 December

Any of the above holidays falling on a Saturday shall be observed on the preceding Friday. Holidays falling on a Sunday shall be observed on the following Monday.

**8.0 DATA DELIVERABLES**

Deliverables required by the Government IAW this PWS and shall be provided in a commercial Contractor developed, Government COR approved format. All required deliverable shall be

provided to the Government IAW each DD Form 1423, Contract Data Requirements List (CDRL) included in the TO.

**8.1 Transmission of Deliverables**

Deliverables are to be transmitted electronically with a cover letter, on the Prime Contractor’s letter head, describing the contents. The Contractor shall provide deliverables as required per COR request. All reports shall be accomplished utilizing the MS Office Software suite or as otherwise directed by the Government. Products and documentation delivered under the TO become the property of the Government and shall include Unlimited Data Rights. Table 4 below shows the deliverables covered in this TO.

<b>Table-4 Deliverables Covered in this Contract</b>		
<b>DELIVERABLE</b>	<b>DUE DATE</b>	<b>CDRL</b>
<p>The Contractor shall deliver the Management Plans identified in CDRL A001 to the COR and CO IAW PWS. The Management Plans consists of three plans:</p> <p>Safety Plan, PWS paragraph 8.2.2; and</p> <p>Quality Control Plan (QCP), PWS paragraph 8.2.3.2.</p> <p>Work Action Plan (WAP) PWS paragraphs: 8.2.1, x.x.x</p>	<p>Safety Plan is due fourteen (14) calendar days after award of FCA contract.</p> <p>QCP is due fourteen (14) calendar days after award of FCA contract. The Contractor shall provide an updated version of the QCP to the Government within seven (7) calendar days following any changes to the plan.</p> <p>Each Work Action Plan is due within twenty-one (21) calendar days following award of individual Task Order and prior to FCA site visit.</p>	CDRL A001
		CDRL A002
		CDRL A003
		CDRL A004
		CDRL A005

**\*NOTE: Email Correspondence – Subject line shall include location on ALL emails.**

### **8.1.1 Calendar Days, Weekends, Federal Holidays**

The Government must receive the deliverable by the start of the next business day. If the due date falls on a Saturday, Sunday, or Federal holiday, the Government expects receipt by the start of the next business day.

### **8.1.2 Government Review of Deliverables**

The Contractor should assume 21-days for receipt of Government comments for review of deliverables. If necessary a meeting will be scheduled to discuss corrective actions.

## **8.2 Deliverable Details**

The following describes deliverables associated with this TO.

### **8.2.1 Work Action Plan (WAP)**

The Contractor shall prepare a WAP that identifies the scope, base access requirements, safety considerations, quality control procedures, inspections tools, critical assumptions and constraints. Plan should include, at a minimum: a list of structures and linear structures to be inventoried/assessed, proposed inventory/assessment schedule, assessment team organization chart, list and qualifications of field team members (experience/training), installation team, and inventory/assessment procedures. The Contractor shall deliver the WAP to the CO and COR within twenty-one (21) calendar days following award of PWS. **(CDRL A001)**

### **8.2.2 Safety Plan**

Safety Plan shall address the use of Personnel Protective Equipment (PPE), inspection procedures, confined space entry, proper climbing techniques during roof access and any irregular access over ten (10) feet above ground level, etc. Applicable Occupational Safety and Health Administration (OSHA) Manual and U.S. Army Corps of Engineers, Safety and Health Requirements Manual EM 385-1-1 shall be referenced; see links at paragraphs 15.2 and 15.3. Emergency notification numbers for medical emergencies, as well as location of nearest hospital emergency facility will be distributed to each assessment team member. The Contractor shall conduct safety briefings with field assessment personnel on a frequent basis (e.g. daily or weekly) to include ongoing lessons learned from inspections. The Contractor shall adhere to all Installation safety requirements. The Contractor shall deliver Safety Plan to the CO and COR within fourteen (14) calendar days following award of Utilities Management Plan Support Contract. **(CDRL A001)**

## **8.2.3 Quality Control**

### **8.2.3.1 Contractor's Quality Control**

Contractor shall develop, implement, and maintain a comprehensive inspection system that assures compliance with all requirements of this TO IAW FAR Part 46.

### **8.2.3.2 Quality Control Plan (QCP)**

Contractor shall develop a QCP that demonstrates how they will maintain an inspection system acceptable to the Government covering the services under this TO. The QCP shall demonstrate the Contractor's ability to successfully accomplish assessments; to include their approach to ensure services, objectives, and deliverables provided under this TO be completed on time, are technically sound, and professionally accomplished IAW the PWS.

The QCP shall include the following minimum requirements:

- (a) A description of the inventory/assessment process to cover all major services and deliverables. The description shall include specifics as to the areas to be inspected on both a scheduled and unscheduled basis, frequency of inspections, and the title of inspectors.
- (b) A description of the methods to be used for identifying and preventing defects in the quality of service performed.
- (c) A description of the records to be kept to document inventories/assessments and corrective or preventative actions taken.
- (d) All records of inventories/assessments performed shall be retained and made available to the Government upon request throughout the performance period, and for the period after completion, until final settlement of any claims under this TO.

The Contractor shall develop an outline detailing the process they intend to use to ensure field data is collected based on the SMS Playbook to accurately reflect utility inventory and condition. The interval of Contractor QC spot checks shall be determined by statistical confidence that the data is accurate per inventory/assessment team member. Also include in QCP an outline of experience/certifications/training for each team member based on system assessment responsibility. The Contractor shall deliver QCP to the CO and COR within fourteen (14) calendar days following award of Utilities Management Plan Support Contract. The Contractor shall provide an updated version of the QCP to the Government within seven (7) calendar days following any changes to the plan. **(CDRL A001)**

#### **8.2.4 Field Survey In-Brief and Out-Brief Reports**

Contractor Field Survey In-Brief and Out-Brief Reports shall be submitted electronically. Reports shall be submitted utilizing and applying computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. In-Brief Report is due to COR and installation POC seven (7) calendar days before site visit. Out-Brief Report is due one (1) calendar day before Out-Brief at installation.

#### **8.2.5 Installation Trip Report**

Report is due from the Contractor to COR and Base POC fourteen (14) calendar days after the completion of a site assessment. Trip report shall detail scope, critical assumptions and constraints from In-Brief. Trip Report shall also detail inventory and assessment findings presented in the Out-Brief, including: daily site report of activities, information about the teams utilized during site visit (e.g. number of teams, names of team members, their roles, etc.), timeline of deliverables, and cumulative lessons learned. Reports shall be submitted utilizing and applying computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. **(CDRL A00x)** The Draft Installation Status Report shall be due twenty one (21)-calendar days following completion of this TO, Site Visits at installations. Final Installation Status Report shall be due fourteen (14) calendar days following corrective comments or three

(3) calendar days following confirmation of accuracy from Government.

### **8.2.6 Photographs**

Photographs for inspections marked A+ or lower will be documented and need not be reproduced for separate submission. Photos of nameplate information shall be provided via CD/DVD with the Installation Status Report. File naming convention shall be consistent across all installations. **(CDRL A00x)** The Draft Installation Status Report shall be due twenty one (21)-calendar days following completion of this TO, Site Visits at installations. Final Installation Status Report shall be due fourteen (14) calendar days following corrective comments or three (3) calendar days following confirmation of accuracy from Government.

### **8.2.7 Installation Status Report Requirements**

The Contractor shall submit Installation Status Report for each installation according to the schedule outlined in the Key Service or Deliverable Schedule. The Contractor shall include all raw data, charts, spreadsheets, calculations, and other supporting documentation in the Installation Status Report. Reports shall be submitted utilizing and applying computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. **(CDRL A00x)** The Draft Installation Status Report shall be due twenty one (21)-calendar days following completion of this TO, Site Visits at installations. Final Installation Status Report shall be due fourteen (14) calendar days following corrective comments or three (3) calendar days following confirmation of accuracy from Government.

### **8.2.8 Installation Status Reports**

A detailed narrative at the executive level and system levels shall be written in a clear and concise manner. Reports shall be submitted utilizing and applying computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. The Draft Installation Status Report shall be due twenty one (21)-calendar days following completion of this TO, Site Visits at installations. Final Installation Status Report shall be due fourteen (14) calendar days following corrective comments or three (3) calendar days following confirmation of accuracy from Government. Descriptions shall consist of current condition and any existing deficiencies. Contractor shall coordinate this report format and final contents with COR; content of Final Installation Reports may also include items identified in paragraphs a) through c) below. **(CDRL A00x)**

- a). Photographs - Photos of deficiencies marked as A+ or lower shall be noted in the report. Photographs will be documented and need not be reproduced for separate submission, other than the final report.
- b). Safety Hazards List - The Contractor shall submit a separate list of any safety hazards/violations noted, as a separate Microsoft Word/Excel document file that accompanies the draft & final reports.
- c). Lessons Learned - The Contractor shall provide lessons learned and document any trends discovered across all installations.

### **8.2.9 Program Progress Report**

The Contractor shall provide current status of Project Scope to include: Overall Installation/Site Completion, Action Items, Limitation Factors, and other discussion of major issues (**CDRL A00x**). Reports shall be submitted utilizing and applying computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. Each Program Progress Report is due no later than the 25<sup>th</sup> day of each reporting month.

## **9.0 SECURITY**

### **9.1 Position of Trust**

Tasks required under this TO are “Unclassified.” All Contractor personnel require a minimum of a NACI/SF85 for any position that requires access to the internet, use of automated systems or unescorted entry into restricted or controlled areas prior to reporting for duty in support of each TO. The investigation is not for a security clearance; it is for a position of trust. This is a mandatory requirement set forth in Department of Defense Manual/Air Force Manual (DoDMAN/AFMAN) 5200.02/AFMAN16-1405, Air Force Security Program. A Common Access Card (CAC) shall be issued to a Contractor as determined by the Government. CAC issuance will be IAW AF Federal Acquisition Regulation Supplement (AFFARS) 5352.242-9001. *NOTE: Contractor shall adhere to any/all revisions, and/or changes to the aforementioned DoDMAN, AFMAN, and AFFARS references identified within this PWS section.*

### **9.2 Security Documentation**

Documentation required for security certification shall be the responsibility of the Contractor. Each installation commander is responsible for access requirements particular to their installation. A minimum two (2) week notification is required to ensure the TO employee shall be authorized access to the installation(s) identified in the TO.

## **10.0 INFORMATION ASSURANCE (IA) REQUIREMENTS**

### **10.1 IA Certification**

The Contractor shall ensure that all personnel accessing information systems have the proper and current information assurance certification to perform IA functions described in DoD 8570.01-M, Information Assurance Workforce Improvement Program. The Contractor shall meet the applicable information assurance certification requirements.

### **10.2 Contractor Consent to Background Checks**

Contractor shall not employ persons to perform under this TO if such employee is deemed or identified by the AF as a potential threat to the health, safety, security, general well-being or operational mission of the installation and its population. Nor shall Contractor or its Subcontractor employ persons under this TO who have an outstanding criminal warrant as identified by Law Enforcement Agency Data System (LEADS) through the National Crime Information Center. LEADS checks will verify if a person is wanted by local, state, and federal agencies. All Contractor and Subcontractor personnel must consent to LEADS background checks. Contractor and Subcontractor personnel who do not consent to a LEADS check will be denied access to the installation. Information required to conduct a LEADS check includes: full

name, driver's license number, and/or social security number, date of birth of the person entering the installation, and completion of a background check questionnaire. Contractor must have this information ready to provide to the Installation Visitor Control Center, if requested. Contractors must ensure their employees and those of their Subcontractors have the proper credentials allowing them to work in the United States. Persons later found to be undocumented or illegal aliens will be remanded to the proper authorities. Contractor shall not be entitled to any compensation for delays or expenses associated with compliance to this requirement.

### **10.3 Access to Government Facilities with Controlled or Restricted Areas**

Contractor must comply with security regulations imposed by the installation commander and/or the agency responsible for the project location. Due to specific mission requirements inherent in the nature of controlled or restricted areas, the Government may direct Contractor to leave the controlled or restricted areas at any given time.

### **10.4 Security Training**

All Contractor personnel shall complete Antiterrorism Level I Training within 30 calendar days of TO start, as required by Department of Defense Instruction DODI O-2000.16. Newly hired personnel shall complete the Antiterrorism Level I Training within the first 30 calendar days of their employment. Refresher Antiterrorism Level I Training shall be completed and documented annually thereafter. The training is provided at <https://atlevel1.dtic.mil/at/> and also available through Advanced Distributed Learning Services (ADLS), Force Protection Course (ZZ133079) at [https://golearn.csd.disa.mil/kc/main/kc\\_frame.asp](https://golearn.csd.disa.mil/kc/main/kc_frame.asp) for AF Portal access or <https://golearn.csd.disa.mil/kc/login/login.asp> for non-portal login.

### **10.5 Local AFB Regulations**

Contract personnel shall be cognizant of, and comply with the regulations and policies of each AFB installation to include fire, traffic, safety and security policies and regulations. Personnel shall not enter restricted areas on an AFB unless required to do so, and only upon prior approval from the host installation. Items such as identification badges, vehicle passes and/or entry permits, and facility escorts shall be coordinated by the CM with the COR and applicable AFB installation point-of-contract (POC). Prior to mobilization to each AFB location, the Contractor shall obtain facility entry requirements and acquire information on any local exercises or base events which could cause a work delay. The Contractor shall provide the local installation POC the following information at least 15 calendar days prior to arrival at a designated AFB: 1) Names of all TO personnel to be working at location; 2) Citizenship, State of birth for United States citizens; and 3) A valid driver's license, vehicle insurance, and vehicle registration.

### **10.6 Access to Installation during Force Protection Conditions (FPCONs)**

As determined by each installation commander.

### **11.0 TRAVEL**

The Contractor shall be required to travel for performance of tasks associated in support of the PWS All travel shall be coordinated with the COR and approved by the CO. Once travel is approved by the CO, the Contractor, shall make travel arrangements to include airline, hotel, and rental car reservations IAW the Joint Travel Regulation (JTR), IAW FAR 31.205-46. It is also



the responsibility of the Contractor to have the necessary credentials to enter AFB prior to traveling.

## **12.0 MATERIALS/OTHER DIRECT COSTS (ODC)**

The Contractor may incur incidental costs supporting the performance of required services under this PWS. A separate FFP CLIN for ODC's is included in this TO. Materials purchased by the Contractor must be approved by the COR and CO prior to purchase to ensure proper funding is allocated on the ODC (Material CLIN). Any material not approved by the COR and CO prior to purchase may require the Contractor to submit an equitable adjustment (EA) request for unexpected material costs. EA's shall be submitted to the Government contracting office that issued the TO.

## **13.0 OTHER PERTINENT INFORMATION**

### **13.1 Conflicts of Interest**

Contractor shall include in its proposal any actual or potential conflicts of interest that may arise under the performance of its contract. Also, Contractor shall immediately notify the CO, if during the performance of the contract, Contractor becomes aware of any circumstance where its personnel or Subcontractors may have a conflict of interest. In such circumstances, Contractor shall propose a Conflict of Interest mitigation plan offering suitable processes for alleviating situations that lead to actual and/or potential conflict of interest situations, as well as situations that give the appearance of a conflict of interest. Contractor is also cautioned that there may be instances where actions it takes under this TO may preclude it from proposing on request for proposals in support of the AF mission or other related activities of the AF.

### **13.2 Contractor Manpower Reporting**

The Contractor shall report ALL labor hours (including subcontractor labor hours) required for performance of services provided under this TO via a secure data collection site. The Contractor is required to completely fill in all required data fields at <https://sam.gov>. Reporting inputs will be for the labor executed during the period of performance for each Government fiscal year (FY), which runs 1 October through 30 September. While inputs may be reported any time during the FY, all data shall be reported no later than 31 October\* of each calendar year. Contractors may direct questions to the <https://sam.gov> help desk.

\*Reporting Period: Contractors are required to input data by 31 October of each year.

Uses and Safeguarding of Information: Information from the secure web site is considered to be proprietary in nature when the TO number and Contractor identity are associated with the direct labor hours and direct labor dollars. At no time will any data be released to the public with the Contractor name and TO number associated with the data.

### **13.3 Non-Disclosure Agreements**

If specified in the PWS, the Contractor shall provide the Government non-disclosure agreements (NDAs). A copy of all NDAs shall be provided to the COR and CO at request.

### **13.4 Non-personal Services**

This TO is a “non-personal services contract” as defined in FAR 37.101. It is, therefore, understood and agreed that the Contractor: (1) shall perform the services specified herein as independent Contractors, not as employees of the Government; (2) shall be responsible for their own management and administration of the work required and bear sole responsibility for complying with any and all technical, schedule, or financial requirements or constraints associated with performance of this TO; (3) shall be free from supervision or control by any Government employee with respect to the manner or method or performance of the services specified; but (4) shall, pursuant to the Government’s right and obligation to inspect, accept or reject the work, comply with such general direction of the CO, or the duly authorized representative of the CO as is necessary to ensure accomplishment of the TO objectives.

### **13.5 Government Down Time for Various Authorities including the President, Secretary, Secretary of Defense, Secretary of the Air Force, AFMC/CC, AFCEC/CC and 772 ESS/CC**

- a) **Base Closures Due to Emergencies.** The Installation Commander or delegated official may decide to close all or part of the base in response to an unforeseen emergency or similar occurrence. Sample emergencies include, adverse weather such as; snow or flood, an act of God such as a tornado or earthquake, acts of war, terrorism, computer failures, or a base disaster such as a natural gas leak or fire. Contractor personnel are considered "non-essential" for purposes of any instructions regarding the emergency.

(1) The Contractor shall be officially dismissed upon notification of a base closure IAW with subsequent procedures located in paragraph (b) of this section. The Contractor shall promptly secure all Government furnished property appropriately and evacuate in an expedient but safe manner.

(2) With regard to work under the contract, the Government shall retain the following options the Government may:

- i) Grant a time extension in this TO delayed by the closure, subject to the availability of funds.
- ii) Forego the work. The Contractor shall not be paid for services not performed.
- iii) Reschedule the work on any day satisfactory to both parties.

#### **(b) Base Closure Notification Procedures.**

(1) After an official decision to close a base has been made by the Base Commander, local television and radio stations will be notified of the closure.

(2) The Contractor is directed to listen or watch one of the local radio or television stations for notification of a base closure. Contractor shall follow instructions for non-essential personnel.

(3) The Contractor is responsible for base closure notification to his/her employees.

**(c) Base Closure Due to Non-Emergencies.** The Base Commander or delegated official may elect to close all or part of the base for non-emergency reasons such as time-off award, base open house, etc. In the event of a non-emergency base closure, the COR and the Contractor shall jointly choose a course of action.

(1) If there is not a CER or other Government personnel available during the scheduled base closure, the Contractor shall not work on-site. The Government may grant a time extension in work delayed by the closure or equal to the amount of time of the closure, subject to the availability of funds. The Government shall not be liable for time not worked.

#### **14.0 REQUIRED QUALIFICATIONS**

Contractor shall meet the Qualifications and Experience as identified in Appendix 1 of this PWS.

#### **15.0 APPLICABLE DOCUMENTS**

The Contractor shall identify and comply with all applicable federal, EOs, state, and local statutes, AFI, AFMs, AFPs, UFCs, regulations, guidance, and policy letters. **NOTE: If a conflict in guidance exists, the Contractor shall notify the COR or CO immediately for clarification prior to proceeding.**

##### **15.1 UFC Documents**

As a reference, UFC's are located at: <https://www.wbdg.org/about-wbdg-whole-building-design-guide>

##### **15.2 OSHA OTM**

As a reference, OSHA Technical Manual (OTM) is located at: <https://www.osha.gov/dts/osta/otm/index.html>

##### **15.3 EM 385-1-1**

As a reference, U.S. Army Corps of Engineers, Safety and Health Requirements Manual EM 385-1-1 is located at: <https://www.usace.army.mil/Missions/Safety-and-Occupational-Health/Safety-and-Health-Requirements-Manual/>

#### **16.0 APPENDICES**

Appendix 1 Contractor Qualifications & Experience

#### **17.0 ATTACHMENTS**

Attachment 1 SDSFIE 4.0.3 SCHEMA

Attachment 2 Implementation of LS Process

Attachment 3 SMS – Utilities Guidance: Business Rules for Utilities Segmentation

## **APPENDIX 1 CONTRACTOR QUALIFICATIONS & EXPERIENCE**

### **1.1 Requirements for Geospatial Information Technicians (Journeyman)**

**Educational Level:** BA/BS from an accredited school in Geospatial Information Technologies, Cartography, Computer Science or related program with GIS coursework required.

**Years of Experience:** A minimum of three (3) years Geospatial Information Systems (GIS) experience including data maintenance and collection, spatial data standards, geodatabases, and functional relationships.

#### **Knowledge, Skills, and Abilities (KSAs):**

Provide demonstrated performance of work in the following areas:

- 1). Geospatial Information Systems (GIS) data maintenance and collection, specifically:
  - Data: To include field collection, identifying, compiling, arranging, sorting, organizing, incorporating, reviewing, and determining applicability.
  - Analysis: To include comparatives, gaps, needs, values, limits, applications, matrices, identification, feasibility, feedback, processes, models, impacts, issues, manipulation, organizational, performance, and recommendations.
  - Research: To include benchmarking, developing models and/or methodologies, forecasting, and recommendations.
  - Data standards: To include Spatial Data Standard for Facilities Infrastructure and Environment (SDSFIE), the single Department of Defense (DoD) spatial standard that supports common implementation and maximizes interoperability for installation, environment, and civil work missions.
- 2). Use of surveying tools and equipment to perform required efforts to collect and analyze geospatial data.
- 3). Knowledge and experience in utilizing and applying computer software including ESRI GIS software and formats such as ArcGIS, geodatabases, and shape files.
- 4). Knowledge and experience in utilizing and applying ESRI ArcPad. Autodesk Computer Aided Design (CAD)/GIS software and formats.

**Certifications:** None

#### **Security Requirement:**

US Citizenship  
Position of Trust

## 1.2. Requirements for Data Analyst (Journeyman)

**Educational Level:** Bachelor Degree from an accredited discipline equal or related to Geospatial Information Systems; engineering background preferred.

**Years of Experience:** A minimum of three years of experience in geospatial data analysis, and using standard GIS tools and utilities to enter and correct data in GIS databases and provide other technical support for GIS systems and generation of cartographic maps and GIS products.

### **Knowledge, Skills, and Abilities (KSAs):**

Provide demonstrated performance of work in the following areas:

1). Geospatial Information Systems (GIS) data analysis, specifically:

- Data mining: Mining enterprise systems and applications for data and information in support of infrastructure investment strategy and planning. Extensive knowledge of querying databases using structured query language (SQL) is required.
- Data collection: Includes identifying, compiling, arranging, sorting, organizing, incorporating, reviewing, and determining applicability from various sources
- Data analysis: Understanding and interpreting facilities, infrastructure, and planning data to include comparatives, gaps, needs, values, limits, applications, matrices, identification, feasibility, feedback, processes, models, impacts, issues, manipulation, organizational, performance, conformity and recommendations. Includes fusing data from several sources to conduct analysis and provide reports, tables, graphs, and charts.
- Data entry: Preparing data, documents, and files for entry and upload within established standards.

2). Utilizing and applying computer software including Microsoft Office (Excel, Word, and PowerPoint), ESRI ArcGIS 10.x, ESRI ArcPad, and Autodesk AutoCAD 2013.

3). Ability to work with planning, engineering and survey professionals to analyze data and develop useful maps and exhibits for a variety of planning and engineering documents.

**Certifications:** None

### **Security Requirement:**

US Citizenship  
Position of Trust

### **1.3. Requirements for Geospatial Information Professionals (Senior)**

**Educational Level:** Bachelor Degree from an accredited discipline in Engineering, Cartography, Geospatial Information Technologies, or related subjects.

**Years of Experience:** A minimum of ten (10) years Geospatial Information Systems (GIS) data maintenance and collection, spatial data standards, and geodatabases.

#### **Knowledge, Skills, and Abilities (KSAs):**

Provide demonstrated performance of work in the following areas:

- 1). Geospatial Information Systems (GIS) data maintenance and collection, specifically:
  - Data standards: To include Spatial Data Standard for Facilities Infrastructure and Environment (SDSFIE), the single Department of Defense (DoD) spatial standard that supports common implementation and maximizes interoperability for installation, environment, and civil work missions.
  - Geodatabases: Creation of geodatabase models for use by GIS professionals and technicians, including the migration of legacy GIS data to a Geodatabase.
  - Data: To include field collection, identifying, compiling, arranging, sorting, organizing, incorporating, reviewing, and determining applicability
  - Analysis: To include comparatives, gaps, needs, values, limits, applications, matrices, identification, feasibility, feedback, process, models, impacts, issues, manipulation, organizational, performance, and recommendations
  - Research: To include benchmarking, developing models and/or methodologies, forecasting, and recommendations
  - Business process improvement
  - Implementation planning
  - Metric development and analysis
- 2). Extensive knowledge and experience in utilizing and applying computer software including ESRI GIS software and formats such as ArcGIS, ArcPad, geodatabases, and shape files.
- 3). Knowledge and experience in utilizing and applying Autodesk GIS software and formats.

**Certifications:** None

**Security Requirement:** US Citizenship  
Position of Trust

## 1.4 Requirements for - Engineer

**Educational Level/Years of Experience:** Education or training in three (3) or more of the following areas: Individual identified shall have followed a program of study resulting in a Bachelor of Science/Bachelor of Science, Engineering / Bachelor of Science, Architecture / Bachelor of Science, Construction Management degree or related program from an ABET accredited university. Individual shall have a complete understanding of all of the following: inspections, data collection, assessments, UNIFORMAT II standards, real property records validation, data analysis and using standard building construction and assessment tools.

**Years of Experience:** A minimum of five (5) years in engineering services (design, project management, etc.)

### **Knowledge, Skills, and Abilities (KSAs):**

Provide demonstrated performance of work in at least six (6) of the following areas:

- 1). Provide demonstrated performance of work in at least six (6) of the following areas:
- 2). Knowledge of industry, federal and state engineering and construction standards / regulations.
- 3). Ability to coordinate access to facilities, organize briefings, and conduct interviews with personnel.
- 4). Ability to organize and gather linear structure data, conduct analysis, prepare reports and provide recommendations without assistance.
- 5). Strong written and verbal communication skills.
- 6). Ability to utilize and apply computer software including: Microsoft Office (Excel, Word, and PowerPoint), Autodesk AutoCAD, etc.
- 7). Ability to gather data / bar codes from existing equipment / systems, and use it to determine additional information (type, make, model / serial number, capacity / rating, etc.)
- 8). Ability to recognize linear structure and equipment safety hazards
- 9). Ability to collect digital photo-documentation of linear structures and equipment and upload photos.

**Certifications / Licenses:** Highly recommended

### **Security Requirements:**

U.S. Citizenship and DoD Government Non Sensitive, Tier I, Security Clearance requiring Favorable Background check with written Inquiries, also requires SF85 & Favorable Fingerprints.

## **1.5 Requirements for Project Manager**

**Educational Level/Years of Experience:** BA/BS Degree from an accredited discipline in Engineering, Architecture, Construction Management, Project Management, or Facility Management. Individual shall have documented experience with: utility systems and equipment inspections, data collection, UNIFORMAT II standards, and real property records validation. In addition individual shall have the ability to utilize and apply computer software including: Microsoft Office (Excel, Word, PowerPoint), Autodesk AutoCAD, etc. Individual shall have experience: working with Federal Government Contracting Officers, Contracting Officer Representatives and Installation Points of Contact. Individual shall have experience, scheduling projects, tracking schedule progress/completion, making payment requests, conducting effective technical presentations to management and tactful coordination with a variety of project stakeholders.

**Years of Experience:** A minimum of ten (10) years managing construction/engineering projects involving either facility evaluations, or infrastructure design, or commercial construction.

### **Knowledge, Skills, and Abilities (KSAs):**

Provide demonstrated performance of work at least 10 of the following areas:

- 1). Knowledge of three or more of the following Facility and Building systems: Foundations, Basement Construction, Superstructures, Exterior Enclosures, Roofing, Interior Construction, Stairway Inspection, Interior Finishes, Conveyance Systems, HVAC, Fire Protection, Electrical, and Facility Equipment.
- 2). Knowledge of industry, federal and state engineering and construction standards / regulations.
- 3). Ability to prepare and provide to the customer reports and analysis based on Facility Condition Assessments and the Building Condition Index (BCI) across the installations infrastructure portfolio.
- 4). Ability to coordinate with Government Contracting Officers, Contracting Officers Representatives and installation Points of Contact to access installations, organize and conduct briefings, and oversee completion of required documents, reports and updates.
- 5). Ability to track and report issues and concerns on individual project TOs and the overall program contract, and help resolve potential issues at the project and program levels.
- 6). Ability to organize, prepare and execute: pre-planning meetings with installations, pre-visit meetings with team members, in-briefs with base personnel, daily updates with installation POC and out-briefs to customers.
- 7). Demonstrated strong written and verbal communication skills, and ability to prepare visual presentations in-person or online.
- 8). Ability to utilize and apply computer software including Microsoft Office (Excel, Word, PowerPoint), and Autodesk AutoCAD, etc.
- 9). Ability to work with contracting, engineering, programming, planning and maintenance professionals to analyze data and develop required deliverables.
- 10). Experience in reaching out to subject matter experts/resources as needed, determining conclusions, and presenting the results in a logical and concise manner.



- 11). Ability to recognize facility, structure, linear structure and equipment safety hazards.
- 12). Ability to prepare reports and maintain accurate records of inspections and recommendations for corrections, including photographs and follow-up notations.

**Certifications / Licenses:** Not required

**Security Requirements:**

U.S. Citizenship and DoD Government Non Sensitive, Tier I, Security Clearance requiring Favorable Background check with written Inquiries, also requires SF85 & Favorable Fingerprints.