

Smithsonian Institution Request for Proposals

Solicitation No: 33330223RF0010024

Smithsonian Institution Water Treatment

Smithsonian Institution
Washington, DC 20560

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Due Date: May 8, 2023

Issuing Office:

Smithsonian Institution
Office of Contracting & Personal Property Management (OCon&PPM)
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Firms must be registered in the System for Award Management (sam.gov) prior to Contract Award. Submittals must be delivered to the Smithsonian email address of Jasmine E. Price at pricej@si.edu by **2:00 PM EST on May 8, 2023.**

Questions pertaining to this Solicitation will be entertained through to April 4, 2023. Additional information may be obtained only by contacting Jasmine E. Price, Contract Specialist, OCon&PPM, pricej@si.edu.

SMITHSONIAN INSTITUTION WATER TREATMENT CONTRACT

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1. GENERAL DESCRIPTION AND SUMMARY

The Smithsonian Institution intends to award a Professional and Technical Combination Firm-Fixed Price (FFP) and Indefinite Delivery, Indefinite Quantity (IDIQ) Contract for all Water Treatment Services throughout the Smithsonian Institution facilities within the Washington DC Metropolitan area, Front Royal Va., Edgewater Md., and New York City to include a complete and all-inclusive Water Treatment Program, inspection and testing services, maintenance and repair services, routine and emergency service calls, supply of chemical products, flush agents, dyes, filters, lights, application of chemical products, consultation, technical expertise, minor training, and reporting for all cooling towers, steam boilers, Reverse Osmosis (RO) systems, fountains, sewer and grease pits, glycol loops, closed loop systems, ground water systems and any other system identified in the attached inventory or this Statement of Work located within the Smithsonian Institution Facilities and any other identified spaces that are controlled and/or operated by the Smithsonian Institution.

The Firm-Fixed Price (FFP) contract portion is a fixed-price sum that includes, but is not limited to, the duties to perform all types of annual, biannual, quarterly, monthly and biweekly testing, inspection, supply of chemical products, supply of filters and lights, the application of chemical products, routine maintenance, minor repair services, minor leak repairs, replacement of filters and lights, minor cleaning of strainers, routine service calls, callbacks, minor cleaning and brushing of fountains, housekeeping, provision of materials and salt, storage of chemicals, correction of deficiencies, consultation, technical expertise, minor training, labor, deliveries, and reporting to maintain the listed Smithsonian water systems, where no part of the existing water systems have failed to operate or perform as required and specified by the original equipment manufacturer (OEM) in proper working condition, under the base contract.

The Indefinite Delivery Indefinite Quantity (IDIQ) contract portion is a time and materials sum that includes, but is not limited to, the duties to perform all types of major repairs, overhauls, replacements, emergency service calls, overtime charges, installations, construction, modifications, fabrications, upgrades, application of dyes and flush agents, chemical and/or glycol loss above the identified levels indicated within this contract, major cleanings and/or brushings, training classes, testing, inspections, and labor that the Smithsonian Institution requests or requires that may be outside of the scope of the Firm Fixed Price (FFP) portion of the base contract; deficiencies that the Contractor identifies as part of their scheduled testing and inspections that would be performed as a preventative measure to prevent a future failure to the existing water system; requests by the Smithsonian for related services, supplies, installations, construction of new systems, etc. that may not be listed in the inventoried SI water systems; or where whole or parts of the listed Smithsonian water systems have failed to operate or perform as required and specified by the original equipment manufacturer (OEM) in proper working condition, under the base contract that exceeds the Firm Fixed Price Threshold (FFPT).

The Smithsonian Institution intends to award a one (1) year contract with the right to exercise the option to extend this contract for nine (9) additional one-year period(s).

2. GENERAL INTENT, SPECIFICATIONS, STATEMENT OF WORK AND COMPLIANCE

- 2.1 General Intent.** The Smithsonian Institution intends that the Contractor shall provide a complete and full service water treatment program to be responsible for the total management and work effort, performance, technical, professional, supervision, quality control and quality assurance for all Firm Fixed Price (FFP) and Indefinite Delivery/Indefinite Quantity (IDIQ) work within this contract to provide, install, deliver, maintain, apply and furnish all personnel, labor, materials, equipment, treatments, programs, chemical products, test kits and/or strips, filters, lights, dyes, salt, flush agents, tools, meters, analyzers, spare parts, and all other services required, including but not limited to, testing, inspection, maintenance, component replacement, repairs, overhauls, cleaning, brushing, vandalism and abuse to equipment and/or systems and components, correction of deficiencies, fabrication, alterations, modifications, construction and installation of new systems, callbacks, routine and emergency services, data collecting and reporting for all water treatment systems on cooling towers, steam boilers, Reverse Osmosis (RO) systems, fountains, sewer and grease pits, glycol loops, closed loop systems, ground water systems and any other system identified in the

attached inventory or within this Statement of Work located throughout the Smithsonian Institution facilities throughout the Washington DC Metropolitan area, Front Royal Va., Edgewater Md., New York City and any identified spaces that are controlled and/or operated by the Smithsonian Institution within the terms of the contract.

The Smithsonian Institution intends that the Contractor shall provide a Water Treatment Program that reduces fuel and electrical consumption through improved heat transfer efficiency, minimizes maintenance and repair costs associated with replacement and/or cleaning of equipment due to scale, corrosion, sludge, deposits, fouling, algae and microbiological growth to provide clean heat transfer between surfaces, minimize unsightly appearances and improve water system operations for all aspects of operation and maintenance. The Contractor shall provide chemicals that have no detrimental effect on metallic, non-metallic, plastic, polyvinyl chloride (PVC), liners, fiber and/or any other materials or surfaces on, around, or within the equipment being treated when used in accordance with the manufacturer's instructions. The Contractor shall accurately monitor and test all systems, fountains, sewer, grease pits and ground water in the listed Smithsonian water systems to assure continuous satisfactory results, prevent algae, unsightly growth, odors, smell, discoloration, etc.

The Smithsonian Institution intends that the Contractor shall continually provide competitive water treatment costs to the SI for the lifespan of the contract.

The Smithsonian Institution intends that the Contractor shall provide, at all times, a Water Treatment Program that maintains the Smithsonian water systems regardless of, but not limited to, changes due to weather, size, capacity, load, occupancy, quality of incoming or returning water, percentage of water losses or gains, fluctuation from Smithsonian personnel or "others" performing maintenance, operations, repairs, additions, or deletions to the existing systems, etc. The amount of equipment and water systems within this Contract inventory may change throughout the lifespan of this contract, systems and/or facilities may be added or removed due to varying circumstances and create conditions which will require the Contractor and the Smithsonian to adjust the inventoried equipment and costs to maintain a constant level of performance to meet the needs of the Smithsonian water systems.

The Smithsonian Institution intends to award a best value Contract to the Contractor that provides their Water Treatment Plan in their Technical Proposal that will best achieve the desired results listed for Smithsonian review during the contractor selection process. The Water Treatment Plan shall identify a schedule, intervals, delivery, inspections, testing, chemicals, applications, filter and light changes, chemical amounts, cleanings, brushing, repairs, replacements, adjustments, and a checklist of all tasks required to maintain all water treatment systems on cooling towers, steam boilers, Reverse Osmosis (RO) systems, fountains, sewer and grease pits, glycol loops, closed loop systems, ground water, swamp coolers, etc. listed in the Inventory throughout the Smithsonian Institution facilities within the Washington DC Metropolitan area, Front Royal Va., Edgewater Md., New York City and any identified spaces that are controlled and/or operated by the Smithsonian Institution within the terms of the contract. The Water Treatment Plan should be equal to or better than the results that are currently in use and may propose different treatments and/or chemicals than those listed but shall provide sufficient details and rationale for all specific chemicals and residual levels being proposed. The Smithsonian shall have total and final determination on the chemicals and specific treatments that are technically acceptable in the proposal. This should be labeled "Water Treatment Plan".

The Smithsonian Institution intends that the Contractor shall provide adequate and appropriately trained personnel that reside within a 75 mile radius of the listed Smithsonian facilities to perform all aspects of the required work within this contract to provide all operations, service calls, deliveries, routine servicing, testing, inspections, routine maintenance, repairs, including but not limited to, application of chemicals, mixing and/or delusion of chemicals, deliveries, supply of chemicals, treatments, cleaning, brushing, inspections, testing, component replacements, repairs, adjustments, overhauls, correction of vandalism and abuse, correction of deficiencies, fabrications, alterations, installation, construction, callbacks, routine and emergency service calls, data collecting and reporting for all water treatment systems on cooling towers, steam boilers, Reverse Osmosis (RO) systems, fountains, sewer and grease pits, glycol loops, closed loop systems, ground water systems, etc. listed in the Inventory throughout the Smithsonian Institution facilities within the Washington DC Metropolitan area, Front Royal Va., Edgewater Md., New York City and any

identified spaces that are controlled and/or operated by the Smithsonian Institution within the terms of the contract. The Contractor shall submit a Staffing Plan to include qualifications, experience, certifications, number of staff residing within the required proximity, etc. with their Technical Proposal addressing the key personnel for all the Smithsonian sites included in this contract. This should be labeled "Staffing Plan".

The Smithsonian Institution intends that the Contractor shall provide twenty-four (24) hour emergency call services, seven (7) days a week for all water treatment systems on cooling towers, steam boilers, Reverse Osmosis (RO) systems, fountains, sewer and grease pits, glycol loops, and closed loop systems throughout the Smithsonian Institution facilities, listed in the inventory, within the Washington DC Metropolitan area, Front Royal Va., Edgewater Md., New York City and any identified spaces that are controlled and/or operated by the Smithsonian Institution within the terms of the contract as the Smithsonian Institution deems appropriate. These services are described in Section 2.31.

2.2 Chemical and Testing Requirements. The Contractor shall only utilize chemicals that are manufactured by an ISO 9000 certified manufacturing facility and meet all regulations of the Food and Drug Administration (FDA), Environmental Protection Agency (EPA), Occupational Safety and Health Agency (OSHA), the Smithsonian Institution and any other pertinent guidelines as necessary. Proof of certifications shall be provided in the Technical Proposal and upon request.

The Contractor shall have full laboratory evaluation capability, either in house or immediately available, to assist monitoring, control and troubleshooting for all the SI facility water systems listed in the inventory. The Contractor shall only utilize a CDC Certified Elite Laboratory for general and bacterial testing. Proof of certifications shall be provided in the Technical Proposal and upon request. Laboratory services, analysis and cost shall be provided as part of the Firm Fixed Price (FFP) portion of the contract.

The Contractor shall provide chemicals that have no detrimental effect on metallic, non-metallic, plastic, polyvinyl chloride (PVC), liners, fiber and/or any other materials or surfaces on, around or within the equipment being treated when used in accordance with the manufacturer's instructions.

The Contractor shall NOT mix or dilute any chemicals onsite.

The Contractor shall deliver all chemicals to the "point of use" and transfer them into the appropriate containment areas or containers at each specific site or location as directed by the SI personnel and/or the COTR. **Onsite mixing of chemicals shall NOT be permitted.** All chemicals must be stored on spill containment pallets and/or placed in appropriate containment tanks, areas and/or containers per the manufacturer's specifications and/or otherwise at a place per the instruction of the Smithsonian facility management at all locations. **SI personnel shall not handle any chemicals, in any manner, that are being delivered by the Contractor.**

The Contractor shall take samples to test for, but not limited to, pH, conductivity, cycles of concentration, total hardness, P&T alkalinity, chlorides, iron, specific gravity, copper, aluminum, dissolved solids, metallurgical corrosion, legionella pneumophila, biocide efficacy, LDB growth, corrosion inhibitors, and all chemical treatment residuals in the listed systems as part of the Firm Fixed Price (FFP) portion of the contract.

- **Condenser/Cooling Tower Requirements.** The chemical product shall contain a blend of carboxylate phosphonate, terpolymer for phosphate, polymaleic copolymer, and additional corrosion inhibitors for systems on pH control and receiving makeup that is consistent with DC-Metro, NYC, city, state, county, local and municipal waters. The product will also contain a specific copolymer of acrylic and sulfonic monomers to provide maximum deposition control capable of dispersing suspended solids during bleed off. The chemical shall contain a mixture of organic ferrous and yellow metal corrosion inhibitors. The scale and corrosion inhibitor shall be able to maintain a minimum of 3.5 - 4 cycles (depending on seasonal fluctuations) of concentration within the condensing water system under normal water conditions. Cooling tower make-up shall be monitored to ensure that water savings are achieved under normal conditions, where available. The scale and corrosion inhibitor must control all aspects of deposition and reactions under high stress conditions. **The use of acids is prohibited to achieve the desired cycles.**

The Contractor shall utilize a dual biocide program consisting of an oxidizing biocide and a non-oxidizing biocide using stabilized bromine. The biocides shall be in a liquid form and fed via automated pump assemblies on a regular basis in conjunction with a bleed-off device. The recommended biocides shall be compared using the price per 10,000 gallons of volume and standard feed rates provided by the manufacturer and the EPA. The PPM dosage range must be stated (min/max feed rate). Use middle feed rates for calculations. Sodium hypochlorite shall not be allowed.

Cooling tower calculations for inhibitors and dispersant shall be determined and based on the inventory list or at a minimum of a thirty percent (30%) load and a minimum of 3.5 cycles of concentration for scale and corrosion. Ingredients and active ingredients must be stated within the product and expected residuals within the cooling tower. The PPM dosage range must be stated (min/max feed rate). Utilize middle feed rates for calculations.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, chemical applications, minor filter/strainer cleaning and/or replacements, chemical amounts, etc. and a checklist for all tasks required to maintain the systems as part of the Firm Fixed Price (FFP) portion of the contract in the Water Treatment Plan.

Cooling towers shall be tested for, but not limited to, conductivity, cycles, PTSA, hardness, chlorides, pH, and alkalinity.

Control Ranges:

Cooling Tower:	Range
Conductivity - uS	1250 - 1400
Inhibitor (organophosphonate) - ppm	4 - 8
Azole - ppm	1 - 3
Bromine - slug dose	average 1-2 ppm for 2 hrs.
pH level	8 - 9
PTSA	TBD
Cycles	3 - 4

Chilled Water:	Range
Nitrite (NO ₂) - ppm	400 to 800
Molybdate - ppm	80 to 100
Azole - ppm	5 to 8

- **Steam/Boiler/Closed Loop Requirements.** The chemical product shall contain a blend of phosphates, polymers, sodium molybdate, sodium triazole, polymers, ethanol, or similar amine product, diethylethanolamine and 2 diethylamino. Sludge conditioner shall be integral or added separately to the product in a concentrated liquid form. Liquid sodium sulfite shall be added to eliminate dissolved oxygen in the feed water. Chemicals should be fed via automated pump assemblies and/or shot feeders. Varying amounts of water loss due to leaks, repairs, drain downs and other expected and unexpected events should be considered but an expectation of a one hundred percent (100%) loss rate per year should be calculated. Chemicals shall be compatible with a full temperature range for chilled water, heating water, and dual temperature systems ranging from 38 degrees F to 210 degrees F.

Glycol loops shall contain corrosion inhibitor and be tested for a minimum of 25% glycol level, pH, specific gravity, iron, copper, aluminum, alkalinity, and other total dissolved solids.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, chemical applications, chemical amounts, and a checklist for all tasks required to maintain the systems as part of the Firm Fixed Price (FFP) portion of the contract in the Water Treatment Plan.

Closed loops shall be tested for, but not limited to, conductivity, pH, hardness, iron, copper, alkalinity, molybdate, sulfite, nitrate.

Control Ranges:

Steam Boiler	Range
Conductivity - uS	4000 to 5000
Sulfite (SO3)	30 to 60
Active Polymer - ppm	10 to 30
Phosphate	30 to 60

Hot Water	Range
Nitrite (NO2) - ppm	700 - 1400
Molybdate - (Hazy Expansion, Hazy Main Bldg., HMSG)	80 - 100
Azole - ppm	6 - 10

Steam Condensate	Range
Conductivity - uS	10 - 50
pH Level	7.9 - 8.7
Iron - ppm	0 - 1.5

Feedwater	Range
Conductivity - uS	Record
Hardness - ppm	0 - 1
pH	8.3 - 9
Softener Hardness - ppm	0

RO Systems:	Range
Softener Hardness - ppm	0
Carbon Tank Free Chlorine - ppm	0
RO Conductivity - uS	Record (Less than 25us)
DI Tank Conductivity - uS	Less than 2

- **Fountain Requirements.** Due to visitor interaction with fountains, only pelletized bromine shall be used. All biocides must be approved by the SI for use. Many fountains have a brominator with ORP control in place. The chemical product shall contain, but not limited to, azole free scale and corrosion inhibitors, and algaecides to maintain a 1-2 ppm free chlorine level at all times. All fountains shall always remain free and clear of algae, microbiological growth, and cloudiness. The Contractor shall perform minor brushing, vacuuming and/or cleaning upon every visit as necessary to maintain chemical flow, consistency of product, distribution of chemical throughout the total area and to provide for aesthetic appearance of water features as part of the FFP base contract. The Contractor shall clean and/or replace all filters, screens, strainers, lights, quartz sleeves, etc. on a regular basis as required as part of the FFP base contract. Any screen or strainers that require more than a "normal" amount of tear down or access to clean or replace shall be performed as part of the IDIQ portion of the contract. The Contractor shall only use chemicals that shall have no detrimental effect on metallic, non-metallic, cement, painted, masonry, plastic, polyvinyl chloride (PVC), liners, fiber, piping, tubing, and/or any other materials, surfaces, plants, surrounding plants, grasses,

vegetation, etc. on or within the fountains and systems being treated. The Contractor shall use chemicals in accordance with the manufacturer's instructions.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, chemical applications, filter replacements, cleanings, brushing, light and quartz sleeves replacements, chemical amounts, and a checklist for all tasks required to maintain the fountain as part of the Firm Fixed Price (FFP) portion of the contract in the Water Treatment Plan.

Control Range:

Fountains:	Range
Residual Free Chlorine - ppm	1 - 2

- **Sewer & Grease Pit Requirements.** The chemical product shall be a biodegradable degreaser and deodorizer, non-petroleum based, containing surfactants to enable the degreaser to remain water soluble and floating characteristics to remain on the surface of the water to dissolve grease that floats to the surface.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, chemical applications, chemical amounts, and a checklist for all tasks required to maintain the systems as part of the Firm Fixed Price (FFP) portion of the contract in the Water Treatment Plan.

2.3 Legionella Plan. The Contractor shall provide a Legionella Plan that complies with the most current editions of all applicable codes, directives, laws, procedures, practices, standards, regulations, guidelines, and handbooks including, but not limited to; The American Society of Testing and Materials (ASTM) D5952-08 Legionella, the Environmental Protection Agency (EPA), Center for Disease Control (CDC), the Occupational Safety and Health Act (OSHA), the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHREA), the Cooling Tower Institute (CTI) Best Practices and Guidelines, the Association of Water Technologies (AWT) and keep it updated annually and/or any time that new information or techniques become available. The Contractor shall implement a dual biocide program with an oxidizing biocide to control legionella. The Contractor shall perform annual Legionella testing by an independent Third-Party facility with a Center for Disease Control (CDC) Elite Accreditation.

The Contractor shall provide their Legionella Plan in their Technical Proposal for review during the contractor selection process. The Legionella Plan is included as part of the Firm Fixed Price (FFP) portion of the contract. This should be labeled "Legionella Plan".

2.4 Corrosion Coupon Testing. The Contractor shall perform quarterly corrosion coupon testing, where coupon racks are provided, as part of the Firm Fixed Price (FFP) portion of the contract and ensure that the following corrosion rates are met or better than:

- **Condenser/Cooling Tower Water Corrosion Rate:**
 - **Mild Steel:** Average less than 2.0 mils per year (MPY)
 - **Copper:** Average less than 0.2 mils per year (MPY)
- **Closed Loop System Corrosion Rate:**
 - **Mild Steel:** Average less than 0.5 mils per year (MPY)
 - **Copper:** Average less than 0.1 mils per year (MPY)

2.5 Ground Water Testing. The Contractor shall perform general and quarterly permit required Ground Water Testing by an EPA Certified Lab at the National Museum of African American History and Culture (NMAAHC) as part of the Firm Fixed Price (FFP) portion of the contract to inspect for levels of oil, grease, iron, arsenic, pH, total suspended solids (TSS) and any other items that may be required by authorities, agencies, or the Smithsonian. The Contractor shall provide, maintain and/or replace, but not limited to,

chemicals, acids, caustics, equipment, controllers, pumps, sensors, lights, quartz sleeves, dyes, as required as part of the Firm Fixed Price (FFP) portion of the contract.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, and a checklist for all tasks required to maintain the system in the Water Treatment Plan.

Control Range:

NMAAHC - Ground water	Range
pH Level	6 - 8.5
Conductivity	Record

2.6 Greenhouse Fan/Swamp Coolers. The Smithsonian Greenhouse, located in Suitland Maryland, utilizes large fan type swamp coolers during certain times of the year; approximately eight (8) months for calculating purposes. The Contractor shall perform testing and provide chemicals for Smithsonian personnel to treat them manually, when in use, with a Smithsonian approved biocide chemical such as Uptake or Kleengrow or that has, at a minimum, the same chemical makeup; is NOT toxic to animals or humans; does NOT carry an inhalation risk; and NOT detrimental or corrosive to metals. The Contractor shall test them regularly to prevent algae, microbiological growth and/or legionella as part of the Firm Fixed Price (FFP) portion of the contract.

The Contractor shall identify a schedule that identifies intervals, inspections, testing, type of chemical, chemical applications, chemical amounts, and a checklist for all tasks required to maintain the system as part of the Firm Fixed Price (FFP) portion of the contract in the Water Treatment Plan.

2.7 Cooling Tower Cleaning. The Smithsonian Institution intends that the Contractor shall provide major cooling tower cleaning, upon request, as part of the Indefinite Delivery Indefinite Quantity (IDIQ) portion of the contract. The Contractor shall perform the cleaning per specification and guidelines of the original equipment manufacturer (OEM) to treat for bacteria, descale and clean, but not limited to, dirt, dust, sludge, debris, corrosion, scale, impurities, clogged nozzles, fill media, etc. to improve efficiency, and reduce expenses for heat transfer. When a request is made, the COTR shall notify the Contractor and make a request for proposal (RFP). The Contractor shall provide in their proposal (a) statement of work (SOW) which shall include (b) the nature, details and quantity of the work to be performed or supplies, (c) the location of the jobsite, (d) date of completion, unless it is subject to negotiation, (e) specifications, (f) requirements and (g) cost along with any other Contractor information required in the RFP.

2.8 Intervals. Some minimum intervals for testing are described within this Statement of Work and/or the Inventory List for specific individual pieces of equipment and/or systems that should be calculated accordingly within the Contractor's Water Treatment Plan. If the Contractor deems more or less intervals are needed than those listed, the Contractor shall provide sufficient details and rationale, but the Smithsonian shall have total and final determination of technically acceptable intervals. The Contractor shall identify a schedule that identifies, but is not limited to, intervals, inspections, testing, chemical applications, maintenance, filter replacements, cleanings, brushings, chemical amounts, deliveries, and a checklist for all tasks within this Contract and each system required that will maintain the water systems based on, at a minimum, the OEM specifications. The Inventory Lists provides some load calculations, volumes, etc. and can be used, but not necessarily has to be, used and/or included in the Water Treatment Plan.

2.9 Additional Services. The Contractor shall be present, on an as needed basis, whenever a boiler, chiller or any part of the water systems are opened for inspection by the Smithsonian or others. The Contractor shall assist, provide technical expertise, consultation, and a written report on the conditions of the equipment as part of the Firm Fixed Price (FFP) portion of the contract as necessary.

2.10 Management. The Smithsonian Institution intends that the Contractor shall provide a designated Project Manager with the required expertise to supervise and manage the total management, total work effort, quality control and quality assurance for all Firm Fixed Price (FFP) and Indefinite Delivery/Indefinite

Quantity (IDIQ) work within this contract, including all performance requirements associated with all personnel, labor, materials, equipment, tools, spare parts, inventory, routine and emergency services, callbacks, and all other services within this contract required to perform maintenance, testing, inspections, operation and repairs, including but not limited to, application and supply of chemicals, deliveries, component replacement, overhaul, vandalism and abuse, correction of deficiencies, fabrication, alterations, modification, upgrade, construction, inspection, testing, planning, scheduling, oversight of subcontractors, accounting, quality assurance and quality control, reporting, data collecting, disputes, negotiations, and invoicing specified throughout this entire contract. The designated Project Manager is expected to provide, update and implement industry best practices, Reliability Centered Maintenance (RCM), Predictive Maintenance (PdM) and continuously improve methods and innovative technical approaches for the duration of the contract. The designated Project Manager will be required to work directly with and provide maximum coordination with the Smithsonian Institution thru the COTR. The designated Project Manager shall be identified in the Staffing Plan.

2.11 Employee Qualifications and Training. The Contractor shall provide all their personnel with the required qualifications, expertise, training, and certifications to effectively perform all requirements for the equipment inventory and systems within this contract. The Contractor shall provide an adequate number of staff/employees that reside within seventy-five (75) miles of the inventoried equipment and facilities to perform all requirements for the equipment inventory and systems within this contract. This includes all routine and emergency service calls and callbacks, maintenance, inspections, testing, operations, deliveries, and repairs including, but not limited to, component replacement, overhauls, vandalism and abuse, correction of deficiencies, fabrication, alterations, modifications, adjustments, upgrades, construction, inspection and testing, application of chemicals, delivery of materials and chemicals, consultation, and reporting as specified throughout this contract. The Contractor's personnel shall have at a minimum, ten (10) years of satisfactory experience in performing, analyzing, treating, testing, and maintaining water treatment systems, a Certified Water Technician (CWT) Certification from the Association of Water Technologies (AWT), and at least one (1) personnel, at a minimum, shall be always employed with a Bachelor of Science Degree in Chemistry, Environmental Science, Chemical Engineering, or similar type of degree. The Contractor's personnel shall be current and have always employed at least one person with a minimum certification of each, but not limited to, OSHA 10, HAZWOPER 8 and OSHA 30 training as required per their position(s) being performed under the base contract.

2.12 Meetings. The Contractor shall have daily, weekly, monthly and yearly meetings with the COTR on an as needed basis, to include but not be limited to scheduling, personnel matters, vacations, progress and/or status of Firm Fixed Price (FFP) and Indefinite Delivery Indefinite Quantity (IDIQ) related maintenance and repairs, equipment outages, correction of deficiencies, material and chemical availability, routine and emergency services, callbacks, replacements, overhauls, alterations, invoices, reporting, personnel, and all Smithsonian Institution or Contractor concerns. The Contractor shall provide the agenda and minutes of the meetings to include all parties present at the meeting. The Contractor shall obtain COTR approval of the proposed agenda format prior to use. The meetings may be in person, verbal, via email, teleconference, MS Teams, Zoom or any other approved setting deemed appropriate by the Smithsonian.

2.13 Compliance of Work. The Contractor shall comply with the most current editions of all applicable codes, directives, laws, procedures, practices, standards, regulations, guidelines, and handbooks including, but not limited to; The American Society of Testing and Materials (ASTM) D5952-08 Legionella, ASTM D3370-10 Water Testing in Closed Conduits, ATSM D5464-07 and ATSM D1067-16 (PH and Alkalinity Measurements), ATSM D4778-15 Corrosion of Cooling Water in Heat Exchangers, the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), Maryland Department of Environment (MDOE), Metropolitan Washington Airports Authority (MWAA), the American National Standards Institute (ANSI) Codes, the National Fire Protection Association (NFPA) Codes, the American National Standards Institute Inc. (NEII), The National Electrical Code (NEC), the International Building Code (IBC), the International Existing Building Code (IEBC), the Occupational Safety and Health Act (OSHA), the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHREA), the Cooling Tower Institute (CTI) Best Practices and Guidelines, the Association of Water Technologies (AWT). The Contractor shall also comply with all Federal, State, City, Local, Municipal, and Smithsonian Institution policies, procedures, and directives applicable to all work performed in the terms of this contract.

2.14 Licensing. The Contractor shall be licensed by the appropriate Federal, State, City, Municipal or Local Jurisdiction to provide the maintenance and repair services, testing, inspection, and reporting specified within this contract. All work within this contract shall be performed by technicians specifically qualified and trained to work on water treatment equipment of the type listed in the inventory of equipment. Copies of all the required licenses, certifications, as well as documentation of the qualifications and credentials for all personnel performing work on this contract, shall be provided in the Technical Proposal, and to the COTR prior to award of the contract, and anytime thereafter that there may be a change or addition in personnel.

2.15 Materials and Deliveries. The Contractor shall only provide new original equipment manufacturer (OEM) or factory reconditioned parts and components when providing FFP and/or IDIQ repair and replacement services, when available, as described herein. All replacement units, systems, parts, components, filters, lights, and materials to be used in the maintenance, repair, installation, modification, alteration, fabrication, overhaul, construction, and upgrade of the equipment shall be compatible with the existing equipment. All replacement units, systems, parts, components, filters, lights, and materials to be used in the maintenance, repair, modification, alteration, fabrication, installation, overhaul, construction and upgrade of the equipment shall be "like and kind", of equal or better quality than original equipment specifications and shall comply with applicable government, commercial or industrial standards. If the original equipment manufacturer (OEM) has been discontinued, updated, stopped production or discontinued the quantity of materials or parts for the equipment supplied under this contract, the replacement parts or materials shall equal or exceed the original equipment manufacture (OEM) quality and kind. Non-proprietary parts and equipment shall always be utilized, unless approved by the COTR, and all work should be approved by the COTR prior to installation. The equipment shall be free of missing components or defects, which would prevent it from functioning as originally intended and/or designed. The Contractor is required to provide submittals and the proper documentation to support the replaced components, systems, materials, equipment and parts.

When constructing new water treatment systems, the Contractor shall follow all Smithsonian guidelines and the latest version of the SI Design Standards for the appropriate discipline(s), as approved by the COTR.

The Contractor shall provide a warehouse within a fifty (50) mile radius of all the listed Smithsonian facilities to be able to support and supply the amount and type of chemicals needed to maintain the Smithsonian systems for regular and emergency services in a timely fashion at all times. The Contractor shall provide a properly maintained delivery vehicle located at or within very close proximity to the warehouse to be able to deliver chemicals, materials, and any other required items to maintain and service the Smithsonian in a timely fashion, without delay, regardless of routine or emergency services. Warehouse, location, delivery and vehicle information shall be provided within the Technical Proposal and anytime that it is requested throughout the lifespan of the contract.

2.16 Warranties. At the time of installation of any new components, equipment, pumps, sensors, quills, seals, pipes, tubing, tanks, containers, materials or systems, the Contractor shall submit and furnish to the COTR the written warranty for each piece of equipment, component, part, material furnished under the contract. With each warranty, the Contractor shall furnish the COTR with the name, address, and telephone number of the guarantor's representative nearest to the location who will provide the services, if other than the contractor, prescribed by the terms of the warranty. It shall be the Contractor's responsibility to execute all warranties on both the equipment provided by the Contractor, and upon Smithsonian furnished equipment under warranty at the time this contract begins. At the time of installation of any new components, the Contractor shall tag each item of warranted equipment with a durable, oil and water-resistant tag. The tag shall remain on the component until which time the duration of the warranty has expired. The tag shall show the following information:

- a. Type of Equipment, Component or Part Replaced.
- b. Installed or Accepted Date.
- c. Out of Warranty or Warranty thru Date.
- d. Contract Number.
- e. Name of Installation Company.
- f. Name of Person(s) Who Installed Component(s).

All equipment, components, systems, materials, and parts, other than those installed under this contract, shall not be removed, replaced or deficiencies corrected while still under warranty of the manufacturer or the previous installer without prior written approval of the COTR. All defects in material or workmanship, defective parts, or improper installation and adjustments found by the Contractor shall be reported to the COTR as soon as possible, so that necessary action may be taken. The Contractor shall be knowledgeable of the equipment, parts, components, and systems that are covered by warranty and the duration of such warranties.

2.17 Contractor Furnished Equipment, Spare Parts and Tools. The Contractor shall provide all necessary tools, resources, meters, kits, testing agents and equipment to accomplish the requirements specified in this contract. This includes but is not limited to Automated Data Processing (ADP) equipment, computers, laptops, printers, facsimile machines, scanners, radios, cell phones, vehicles, test equipment, containers, tubes, ladders, carts, test meters, gauges, kits, strips, and other specialized tools or equipment needed to replace, install, maintain, repair, test or operate the equipment listed in the inventory and terms of this contract. The Contractor shall assure that all test equipment, meters, gauges, etc. are fully functional and always calibrated while being used on the equipment of the type listed in the inventory of this contract. The Contractor shall ensure equipment is clearly identified as Contractor owned. The Contractor shall have available on site or in their possession for immediate delivery, a sufficient supply of common spare parts for the repair of the equipment listed in the inventory and terms of this contract.

2.18 Smithsonian Institution Furnished Tools, Drawings, Diagrams, Manuals, Containers and Inventory. The Smithsonian Institution shall provide or make available to the Contractor any tools, drawings, diagrams, equipment manuals, chemical containers, pumps, etc. that is Owner owned to maintain, operate, test, or repair the equipment within the contract. The Contractor shall maintain the integrity and assume accountability of the said items for the duration of the contract and bring any deficiencies to the attention of the COTR as soon as practical from the time of finding as and no later than 24 hours.

2.19 Joint Inventory. The Contractor and the COTR shall conduct an initial joint inventory/site inspection of all furnished SI equipment, tools, drawings, diagrams, manuals, and materials. The Contractor shall certify the findings of this inventory, and assume accounting responsibility for all equipment tools, manuals and materials accepted for use. The Contractor shall conduct annual inventories thereafter, as necessary, in accordance with FAR 45.508, submitting the annual inventories to the COTR electronically within 15 days after the start of each Option Year. This will include any spare, on-site parts or equipment that may be the property of Smithsonian. The Contractor shall provide the COTR a spreadsheet listing the inventoried items in stock as necessary.

2.20 Safety, Accidents, PPE, LOTO, Fire Protection, Combustible Materials, SDS, Signs, Barricades. The Contractor shall comply and provide training for their employees on the most current editions of all applicable Safety Codes and Manuals related to federal, state, city, county, local, municipal, environmental and Smithsonian Institution enforced practices, procedures, directives, laws, regulations and standards including but not limited to the Occupational Safety and Health Act (OSHA).

The Contractor shall report all accidents including but not limited to injury, trauma, occupational disease, exposure, accidents resulting in death, accidents defined by OSHA as “recordable”, accidents including Hazardous Material (HAZMAT) and all incidents resulting in damage to Smithsonian Institution property. The Contractor shall initially inform the COTR verbally as soon as practical and submit a full report of the injury and/or damage to personnel, Smithsonian Institution property and/or equipment within 24 hours of the occurrence.

The Contractor shall provide all Personal Protective Equipment (PPE) such as but not limited to safety glasses, gloves, uniforms, Tyvek suits, aprons, masks, respirators, safety shoes, etc. and training for its employees and use them as required by such policies, laws, directives, practices, and regulations.

The Contractor shall provide all Lock Out/Tag Out (LOTO) equipment and training for its employees and use them as required by such policies, laws, directives, practices, and regulations.

The Contractor and its employees shall know where fire alarms and extinguishers are located in the areas that they are performing services or occupied by them and be trained how to activate them if required.

The Contractor shall notify the COTR about any flammable, corrosive, or combustible materials prior to bringing them on any Smithsonian Institution Building/Facility. The Contractor shall handle and store all combustible supplies, materials and waste in a manner that prevents fire or hazards to any persons or facilities. The Contractor shall follow the most current policies, laws, directives, practices, and regulations pertaining to storage and waste. The Contractor will provide all containers as per the most current and applicable codes to include fire rated cabinets, rag cans, waste cans, drums, pails, etc.

The Contractor shall provide, maintain, and keep updated copies of the Safety Data Sheets (SDS) for all products used in any Smithsonian Institution Building/Facility to the COTR. The Contractor shall provide copies of all the Safety Data Sheets (SDS) that shall be utilized within this contract to the COTR at the time of award for approval prior to any work or services performed. The Contractor shall keep updated, maintain, and replace the Safety Data Sheets (SDS) anytime thereafter that there is a change in product. The Safety Data Sheets (SDS) shall remain in each Building/Facility next to, near to as possible, in the USRO Office or elsewhere approved by the COTR or facility for all products used and/or upon request.

The Contractor shall provide signage on all equipment if it is out of service for any reason, declaring the piece of equipment is "Out of Service". Signage shall be placed in a manner that is visible and unobstructed. The Contractor shall utilize LOTO procedures to secure the equipment. The Contractor shall provide safety barricades to prevent usage, when necessary, to prevent unauthorized personnel access to the work areas, to create a "buffer zone" and to prevent any hazardous situation if applicable. The Contractor shall provide a safe, secure, stable, fire rated, and aesthetically pleasing barrier. The Contractor shall obtain COTR approval of proposed signage and barricades prior to use.

2.21 Employee, Identification, Background Checks, Citizenship, Uniforms, Conduct, Eating, Drinking, Smoking, and Illegal Substance and Alcohol Use. The Contractor shall submit the name, date of birth, full address, Social Security Number, place of birth and citizenship of any employee that is employed on the work of this contract, to be submitted for a completed Smithsonian Institution security questionnaire, background investigation and/or any other forms that may be required when requested by the COTR.

The Contractor's employees shall furnish proof that they are a citizen of the United States or if an alien, that their residence within the United States is legal.

The Contractor shall display the furnished Smithsonian Contractor ID badge while working or present on all Smithsonian properties. When an employee leaves the Contractor's service, the employee's ID badge shall be returned to the COTR within 10 working days. Upon expiration of the contract, the Contractor shall return all employees ID badges to the COTR within 10 working days.

The Contractor shall be easily identifiable with their employer. The Contractor's uniform shall have on an outer garment an identifying emblem or words of sufficient size to properly identify the name of the Contractor and the employee. Clothing shall be neat, clean, and suited to the work or situation.

The Contractor employees shall conduct themselves in a proper, efficient, courteous, and businesslike manner. The Contractor shall remove from the site any individual(s) whose removal is requested by the COTR based on the employee(s) behavior that is deemed inconsistent with the best interest of Smithsonian.

The Contractor shall only eat, drink and smoke in assigned and approved areas designated by the Smithsonian Institution. Smoking is not permitted in any Smithsonian Institution Building/Facility at any hour, at any time, and under any circumstance. Failure to comply is grounds for the Contractor employee(s) to be removed from the premises.

Under no circumstances should the Contractor use or have in their possession any illegal substance or alcohol while on any Smithsonian Institution Building, property or Facility. Failure to comply will be immediate grounds for the Contractor's employee(s) to be removed from the premises.

2.22 Drilling, Welding, Cutting, Grinding, Fabricating, and Permits. The Contractor shall notify and schedule with the COTR at least 48 hours in advance to performing all “hot work”, unless otherwise noted by the COTR, in order to acquire all applicable Smithsonian Institution required permits. The Contractor shall provide all pertinent information to acquire the permits and assure that all required permits are posted in the proper manner for the duration of the work being performed, as directed by the COTR. The personnel performing the work shall be properly trained for the type and kind of work or title that they are assigned on the permit. Daily permits must be acquired no less than twenty-four (24) hours prior to performing all “hot work”. If the “hot work” is not completed as scheduled in the time allotted, immediate notification shall be made to the COTR in order to acquire permits for the following day. If insufficient notice is received by the Smithsonian to acquire the permits in a timely manner, the “hot work” may not be provided. All work that requires a “hot work” permit shall only be performed with a valid permit; no “hot work” shall be performed at any time without a valid permit. The Contractor will notify the COTR when the work is complete, and the permit is no longer required.

2.23 Site Protection, Debris Control and Daily Cleanup. The Contractor shall take all precautions to protect the Smithsonian Institution Buildings and Facilities from damage and destruction from, but not limited to fire, smoke, water, chemical, odor, vapors and electrical. The Contractor shall not be allowed to spread unnecessarily any accumulated debris, excess material, drums, pails, containers, and parts into adjacent areas during the completion of work. The Contractor shall remove and dispose of debris and dirt as it accumulates in the work area itself. The Contractor shall store any debris and rags in designated receptacles as approved by the COTR. All such debris, excess material, parts, pails, drums, containers, waste, packaging, etc. shall be cleaned up and removed at the completion of the job and/or at the end of each day that work is in progress and leave the premises clean upon completion of work. The Contractor shall clean, remove, and dispose of all debris, dirt, materials, pails, drums, containers, etc. at the Contractors expense unless otherwise directed by the COTR.

2.24 Sub-Contractors. The Contractor is responsible for the total management, total performance, total work effort, total supervision, quality assurance and quality control of all Sub Contractors. The Contractor assumes all liability for the Sub Contractor. The Contractor shall provide the names of all Sub Contractors to be used on this contract or at any time throughout the term of this contract. All Sub Contractors shall abide by the same terms as this contract to include, but not limited to, background investigations, ID’s, conduct, appearance, uniforms, safety compliance, code compliance, qualifications, training, licensing, etc.

2.25 Museum Hours, Workdays, Government Holidays, Special Events and Work Hours. Museums are open to the public seven days a week from 10:00 AM to 5:30 PM, excluding Christmas Day. Museum hours will vary seasonally with extended summer hours that occasionally keep the Museums open later during the evening.

Museum and Administration staff office hours are generally from 6:00 AM to 6:00 PM Monday through Friday, except holidays; these are the “regular working hours”.

For holidays that fall on Saturday, the Smithsonian holiday is observed on the previous Friday. For holidays that fall on Sunday, the Smithsonian holiday is observed on the following Monday. The Smithsonian holidays are listed below.

New Year's Day	January 1
Martin Luther King Jr.'s Birthday	January, third Monday
George Washington's Birthday	February, third Monday
Memorial Day	May, last Monday
Juneteenth	June 19
Independence Day	July 4
Labor Day	September, first Monday
Columbus Day	October, second Monday
Veterans' Day	November 11
Thanksgiving Day	November, fourth Thursday
Christmas Day	December 25

*President's Inauguration Day

Special Events may vary occasionally throughout the year, seven (7) days a week twenty-four (24) hours a day including holidays, or from early morning to late evening and may require the Museum to be kept open or closed for extended hours. The hours will vary depending on the event.

2.26 Museum Artifacts. The handling of museum artifacts or scientific research experiments by the Contractor is strictly prohibited. The existing museum artifacts and research related materials may be moved only by authorized Smithsonian Museum curatorial personnel. An offender of this clause may be subject to arrest or removal from the premises and project by Smithsonian security officers. If temporary relocation of artifacts or research experiments is necessary, the Contractor shall give notice to the COTR at least five working days in advance of the time relocation is needed.

2.27 Protection of Historic Properties. Much of the equipment is located in a designated National Historic Landmark property and requires special attention to the quality of materials selected for installation and workmanship efforts to satisfactorily preserve and restore historic elements and finishes of an historic landmark structure. Upon request of the COTR, the Contractor shall submit evidence of technical competence in restoration work for National Historic Landmark structures, including subcontractor resumes, references and photographs or previous similar work.

2.28 Parking. The Smithsonian Institution does not provide the Contractor parking. Parking permits can be purchased on a first come first served basis at some locations, at the Contractors expense, by making arrangements thru the COTR. There may be some locations and/or facilities that shall allow temporary short-term parking on a first come first served basis as available. All Smithsonian parking signage, directions, details, and ordinance shall be strictly followed and shall be enforced while on all Smithsonian property. Contractor vehicles may be towed at the Contractors expense if not followed. Contractor vehicles shall be clearly marked with the Company name and/or logo for identification purposes while on Smithsonian property.

2.29 Inspection, Testing and Certifications. The Smithsonian Institution reserves the right to perform any inspections and tests as deemed necessary to assure that the Contractor is performing in accordance with the terms and specifications within this contract. The inspection may be at the Contractor's place of business, any Contractor occupied space or at any location where work is being performed in conjunction with this contract.

The Smithsonian Institution reserves the right to contract a Third Party to perform periodic inspections, testing, and certification of the equipment and systems inventory maintained under this contract. All deficiencies that are identified during the inspections, testing and certification process shall be corrected by the Contractor and scheduled for re-inspection within 30 days of receiving the initial Inspection Report, otherwise the Contractor assumes all risks, liability, damages to the equipment and/or systems and pays the Third-Party Inspection Contractor for the re-inspection.

The Contractor shall be responsible for all Federal, State, City, County or Municipal licensing, certifications, testing and reporting accordingly for all water treatment systems, if required, and shall assume any fines or penalties for not reporting them to the proper agency(s) or performing the procedures appropriately or within a timely manner or deadline as required.

2.30 Scheduled and Unscheduled Outages. All scheduled equipment outages shall be reported to the COTR and the on-site USRO personnel prior to the outage taking place. Notification shall include LOTO procedures, the equipment identification, reason for the scheduled outage and expected duration of the outage.

All unscheduled outages shall be reported immediately to the COTR and USRO personnel. Notification shall include LOTO procedures, the equipment identification, reason for the unscheduled outage and expected duration of the outage. The Contractor shall advise the COTR and onsite USRO personnel when the equipment is placed back in-service.

2.31 Routine and Emergency Services and Callbacks. The Contractor shall provide seven (7) days a week, twenty-four (24) hour routine service and emergency callback service consisting of a prompt response listed below to requests from designated Smithsonian Institution representatives including the COTR or their designated representative and on-site USRO personnel at any hour, any day, including weekends and holidays. Service calls and callback services are defined as any request for repairs, inspections, adjustments, correction of deficiencies, leaks, etc. for equipment inventory in this contract. **The Contractor shall provide a twenty-four (24) hour, seven (7) day a week Emergency Phone Service number that is manned at all times.**

Service calls and callbacks shall be designated as routine or emergency. All service calls and callback services shall be responded to accordingly to correct deficiencies. All service calls and callback services shall be part of the Firm Fixed Price (FFP) portion of the contract unless determined otherwise by the COTR or identified otherwise in this contract.

Routine service calls and callbacks shall include responding to non-safety, non-emergency issues requiring repairs or corrections to the equipment inventory and/or water systems and that prevent them from working as designed. Routine service calls and callback notification to the Contractor shall be in the form of an email or a phone call to the Project Manager or their representative(s). The Contractor shall return routine service calls and callbacks in the form of a phone call within two (2) hours from the time the contractor receives initial notification. The Contractor shall return routine service calls and callbacks in the form of an email within four (4) hours from the time the contractor receives initial notification. The Contractor shall have a Technician onsite within twenty-four (24) hours, unless approved by the COTR.

Emergency service calls and callbacks shall be responded to immediately to correct safety issues, emergency issues, and hazardous situations to prevent further damage to the equipment inventory and water systems that prevent them from working as designed and/or damage to the facilities. Emergency service calls and callback notifications to the Contractor shall be in the form of a phone call to the Contractor's seven (7) days a week, twenty-four (24) hour designated Emergency Phone Service. The Contractor shall return emergency service calls and callbacks by returning the call within thirty (30) minutes of receipt and have a Technician onsite within two (2) hours during or after the regular working hours as determined by this contract, unless approved by the COTR.

The Contractor shall respond onsite to All service calls and callbacks to ensure that the condition that caused the service call is corrected as quickly as possible prior to their departure unless otherwise noted, such as; due to the existing condition and/or repair being beyond the ability of the responding Technician to perform the duty alone; an after-hour call where there is a lack of an additional trained Technician needed to assist to complete the repair; a lack of parts or materials available at that time. In the event of any of these circumstances, the responding Technician shall temporarily and completely, to the best of their ability, maintain, secure, repair, clean up, Lock Out/Tag Out (LOTO) the equipment, and make a record of their findings, corrections, actions taken, etc. The responding Technician shall report all such deficiencies and/or corrective actions to the COTR and/or the on-site USRO personnel in accordance with the contract reporting requirements as soon as possible and prior to departure. The responding Technician shall also immediately report all such findings, deficiencies and/or corrective actions to the Project Manager. The Project Manager shall report to the COTR the status of the findings, deficiencies, corrective actions taken, status of the equipment, if left out of service, etc. A schedule for repair and duration of the outage shall be reported immediately or no longer than twenty-four (24) hours of the service call or callback. The Project Manager shall also report to the COTR any change of status accordingly.

The Contractor shall ensure that the responding Technician responds accordingly per the times listed in this contract; is qualified; trained; certified; and can make the repair and/or correct the equipment or system without assistance, unless there is an adverse condition listed previously, for which the callback was placed. It is the intent of the Smithsonian Institution to ensure that the Contractor responds to, and that a Technician arrives within the times that are listed below:

- **Routine Service Call or Callback:** In the form of a phone call – Response within two (2) hours from the time the contractor receives initial notification. In the form of an email – Response within

four (4) hours from the time the contractor receives initial notification. Onsite - Within twenty-four (24) hours unless approved by the COTR.

- **Emergency Service Call or Callback:** Response within thirty (30) minutes of initial notification. Onsite - Within two (2) hours during regular hours or after regular working hours as determined by this Contract, unless approved by the COTR.

The response times required above shall be from the time the initial notification (time that the call or email is placed) to the time the responding Technician arrives on-site. **The Contractor shall provide a twenty-four (24) hour, seven (7) day a week Emergency Phone Service number that is manned at all times.**

When a service call or callback is placed as defined by this contract, a time ticket/log shall be signed by the on-site USRO personnel, the COTR or a designated Smithsonian Institution Representative. The time ticket/log shall be provided by the Contractor and shall include but not be limited to the time the callback was placed, the time of the technician's arrival, the time of the technician's departure, a description of the complaint/deficiency, a description of correction or service provided, date, equipment description and building/facility. A copy of the time ticket/log must be provided to the on-site USRO personnel or a designated Smithsonian Institution Representative, and the COTR as support documentation for payment. An email detailing the same information may substitute if approved by the COTR.

2.32 Housekeeping and Deliveries. The Contractor shall be responsible for general housekeeping, cleaning, and upkeep of All areas that the Contractor performs services, duties, maintains, makes deliveries to and/or through, stores materials, chemical products, testing, inspections, repairs, replacements, installations, modifications, fabrications, alterations, correction of deficiencies, etc. The Contractor shall be responsible for any unsightly appearances, messes, spills, leaks, uncleanliness, vapors, odors, smells, stains, trash, drums, empty containers, pails, dirty rags, residue, powders, chemicals, stains, marks, etc. and shall clean the areas immediately and accordingly, as per EPA, OSHA, manufacturer's specifications, and guidelines for their product(s), and as directed by and approved by the Smithsonian.

The Contractor shall remove and dispose of all dirt, debris, dust, liquids, powders, crystals, tablets, chemicals, materials, trash, empty drums, chemical containers, pails, rags, packaging, packaging materials, bags, labels, bottles, inserts, directions, waste, etc. immediately, at all times, when identified, after intended use or completion of applications, testing, repairs, replacements, installations, modifications, fabrications, alterations, corrections, etc. and not left onsite for any extended period, at the Contractors expense. Any damages or adverse conditions that are the result of poor housekeeping, leaks, spills, mess, overflow, vapor, chemical reaction to surrounding surfaces, floors, walls, shelves, surrounding equipment and containment areas, etc. shall be cleaned, repaired and/or replaced at the expense of the Contractor regardless of costs and upon final approval by the Smithsonian. The Contractor shall be responsible for ensuring that all disposal of drums, pails, containers, materials, chemicals, powders, liquids, crystals, tablets, absorbents, rags, etc. are compliant with all applicable Federal, State, City, Local, EPA, OSHA and SI regulations, rules, and/or guidelines. Disposal is not authorized within the SI dumpsters or trash receptacles.

The Contractor shall make all deliveries in a Company owned vehicle, easily identified with the company name and logo. The use of loading docks and specified loading areas shall only be permitted for deliveries. Delivery vehicles shall not be left on loading docks or specified loading areas for extended periods beyond the time allotted to make the delivery. Vehicles shall be towed at the Smithsonian's discretion and at the Contractors expense if violated.

2.33 Phase-In. At least two weeks prior to the Contractor's assumption of responsibility, the Contractor shall have the Project Manager available for participation in the phase-in process. The intent of the contract phase-in is to allow for a turn-over period with the existing Contractor, if any, an introductory meeting, site tour, conducting joint inventory, planning, and scheduling meeting, and administrative meetings. The Contractor shall assume full responsibility for performance under this contract at 12:00 AM on the contract start date or established time decided by the Contracting Officer.

2.34 Phase-Out. During the last quarter of the last option year the Contractor shall work with the COTR to help facilitate the phase-out process with joint inventories, records, reports and documentation turnover, warranty information meetings, and a turnover meeting with the new Contractor via Phase-In meetings and

training for a seamless transition with no adverse effect. The Contractor shall correct all deficiencies noted by SI prior to the contract termination date. Deductions shall be assessed for incomplete work. The Contractor shall be responsible for all contractually required services until 11:59 PM on the last day of the then current awarded option or an established time decided by the Contracting Officer.

3. SCHEDULES AND WORK CONTROL

- 3.1 Annual Work Schedule.** An Annual Work Schedule shall be submitted to the COTR within fifteen (15) days from the beginning of the current Calendar Year to include but not be limited to frequencies, intervals, expected durations, and checklists for all scheduled maintenance, repairs, modifications, upgrades, inspections, testing, deliveries, replacements, cleaning, applications, etc. for each Building/Facility, equipment type, system, loop, etc. in the equipment inventory. The Annual Work Schedule shall include both Firm Fixed Price (FFP) and any Indefinite Delivery Indefinite Quantity (IDIQ) work, if known. All work shall be broken down and identified individually by each Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. and broken down monthly in one Report. The Annual Work Schedule shall be provided electronically. The Contractor shall explain how the Annual Work Schedule will be developed, regularly updated, and submitted to the SI COTR in their Technical Proposal. This shall be labeled as the "Scheduling Plan".
- 3.2 Monthly Work Schedule.** The Contractor shall submit to the COTR a Monthly Work Schedule, if needed, coordinated with the Annual Work Schedule within five (5) days from the beginning of the current month to include but not limited to frequencies, intervals, expected outages, durations, and checklists for all scheduled maintenance, repairs, modifications, upgrades, inspections, testing, replacements, cleaning, applications, etc. for each Building/Facility, equipment type, system, loop, etc. in the equipment inventory for any work that had been missed from the Annual Work Schedule from the previous month. The Monthly Work Schedule shall include both Firm Fixed Price (FFP) and any Indefinite Delivery Indefinite Quantity (IDIQ) work. The Monthly Work Schedule shall include, but not be limited to, all updated, new, recurring or ongoing work, unscheduled work, outages, previously missed work, etc. All work shall be identified by Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. in the same manner and type as the Annual Work Schedule. The Monthly Work Schedule shall be provided electronically.
- 3.3 Work Control.** The Contractor shall manage the total work effort associated with the services required herein to maximize equipment performance and efficiency. The Contractor shall implement all the necessary work control procedures to ensure fully adequate and timely completion of work requirements and permit tracking of work in progress. The Contractor shall plan and schedule work to assure material, supplies, labor, and equipment are available to complete work requirements within the specified time limits, and in conformance with established quality standards. Such management includes, but is not limited to the total planning, scheduling, cost accounting, data maintenance, reporting, management, quality assurance and quality control. The Contractor shall provide staff with the necessary management expertise to assure the performance of the required work. When the Contractor completes work on a piece of equipment, that facility, system, loop, tower, or equipment shall be free of missing components or defects, which would prevent it from functioning as originally intended and/or designed. Corrective or repair/replacement work shall be continued to completion, including operational checks and cleanup of the job site as defined in this contract or each delivery/task order. Except where otherwise noted, repair/replacement shall match existing in dimensions, finish, color, type, and design.

4. REPORTS

- 4.1 Reporting.** This section is an overview of the required schedules and reports. The details of each submittal are described in their specific sections as identified. The Contractor's Technical Proposal will identify how all work will be performed on each system in intervals, i.e., monthly, biweekly, quarterly, semi-annual, annual, etc. The Annual Work Schedule will show all planned dates and intervals for the year broken down by facility and system as described in this contract. The Monthly Work Schedule, if needed, will be based on the Annual Work Scheduled to show any changes or updated work scheduled for the upcoming month or

to clearly identify any uncompleted work tasks from the previous month that need to be rescheduled for the upcoming month. The Monthly Progress Report will show actual work performed, testing, inspections, deficiencies found, corrections, adjustments, deliveries, and results during the previous month clearly identifying all completed work tasks. The Daily Progress Report, if needed, shall include, if any, equipment type, system, loop, etc. that shall be out of service at the end of the current workday, if applicable. The Contractor shall explain how all reports will be developed, regularly updated, and submitted to the SI COTR in their Technical Proposal. This shall be labeled as the "Reporting Plan".

4.2 Monthly Progress Report. The Contractor shall submit a Monthly Progress Report within five (5) days of the current month to include, but not be limited to, all the actual work performed, inspections, testing, results, adjustments, corrections, deficiencies found, checklists, etc. during the previous month for each Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. This work shall include but not be limited to all maintenance (both scheduled and unscheduled), repairs, service calls or callbacks, upgrades, modifications, inspections, testing, replacements, applications, installations, results, findings, deficiencies found, corrections, adjustments, etc. The Monthly Progress Report shall include all ongoing or recurring work and current outages, the actual day(s), time, and duration of the outage, if any were identified, for each corresponding piece of equipment of the inventory. The Monthly Progress Report shall include both Firm Fixed Price (FFP) and Indefinite Delivery Indefinite Quantity (IDIQ) work. All work shall be identified by Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. The Monthly Progress Report shall be provided electronically.

4.3 Daily Progress Report. The Contractor shall submit to the COTR a Daily Progress Report by 5:00 PM daily to include, but not be limited to, any equipment inventory, type, tower, systems, loops, fountain, pit, etc. that shall be out of service at the end of the current workday, if applicable. The Daily Progress report shall be primarily used for any equipment inventory, systems, loops, etc. that is out of service. The report shall include the Building/Facility, equipment type, tower, system, loop, fountain, pit, etc., reason for the outage and expected duration of the outage. If any equipment type, tower, system, loop, fountain, pit became out of service after 5:00 PM on the day of the report, a Daily Progress Report shall be provided by 8:00 AM on the following day to include, but not be limited to, the Building/Facility, equipment type, tower, system, loop, fountain, pit, etc., reason for the outage and expected duration of the outage. The Contractor shall advise the COTR when the equipment type, tower, system, loop, fountain, pit, etc. is expected to be placed back in-service. The Daily Progress Report shall include both Firm Fixed Price (FFP) and Indefinite Delivery Indefinite Quantity (IDIQ) work. The Daily Progress Report shall be provided electronically.

The Contractor shall have an online electronic Reporting System database that allows full access to the Smithsonian Institution to track Reports, Records, Logs, Checklists, etc. and allows the Smithsonian the ability to print, download, and extract all records pertaining to the Smithsonian for the duration of the Contract and for 60 days after the final closeout of this contract. The online Reporting System shall be identified in the Technical Proposal and shall provide a complete detailed description of the type, kind, and abilities. A complete description of how to access and utilize the electronic Reporting System shall be included. The ability to limit users shall be made available to the COTR.

5. RECORDS AND LOGS

5.1 Records. The Contractor shall create, manage, and keep an updated version of service records, checklists, and data for each Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. A separate record file, checklist shall be created, established, maintained, and kept up to date for each Building/Facility, equipment type, tower, system, loop, fountain, pit, etc. The files, records, and data shall be electronic. The files, records, and data shall be able to be made into individual hardcopy prints from the electronic Reporting System database. The records shall cover each work task performed throughout the contract period and contain pertinent equipment inventory information required for historic purposes and continued maintenance and service requirements. Records shall be inclusive of all work including the following items:

- Preventive Maintenance
- Reliability Centered Maintenance
- Inspection, Testing, and Certification
- Checklists
- Replacements, Installations, Modifications, Corrections, Adjustments
- Results of inspections and tests
- Description and correction of conditions and deficiencies found
- Service Calls and Callbacks
- Repairs
- IDIQ Work
- The nature and extent of work performed
- Labor hours expended
- Materials and parts used
- Date(s) work was scheduled, started, and completed
- Name(s) of the individual(s) who performed the services
- Equipment Warranties
- Equipment Schematics and Specifications
- Overall equipment condition
- Any other information the Contractor chooses to include in the records.

5.2 Logs. The Contractor shall provide, create, manage, update, and maintain a Log for each Building/Facility, equipment type, cooling tower, system, loop, fountain, pit, etc. to include but not limited to reports, records, data, maintenance, service calls, visits, service calls and callbacks, repairs, checklists, time, date, etc. according to the most recent codes and any other standard, Smithsonian directive, or laws applicable. The Log shall remain in each Building/Facility next to, near to as possible or in the USRO Office or elsewhere approved by the COTR for each equipment type, system, loop, etc. A copy of the Log may also be electronic. The Log shall be approved by the COTR.

All required records, checklists, and logs shall be the property of the Smithsonian Institution and shall be made available for examination at any time by the COTR. Records, checklists, and logs shall be maintained in a readable, complete, orderly, timely, chronological, and accurate manner at all times. The original records and logs shall be submitted to the COTR within 15 calendar days of expiration of the contract. Copies of the records and logs shall be provided to the COTR at anytime upon request.

6. FIRM FIXED PRICE REPAIR PORTION (FFP)

6.1 General Intent. The Contractor shall plan and execute as part of the Firm Fixed Price (FFP) portion of the contract a maintenance, inspection and testing Program that permit the early detection and correction of items that, if deficient or defective, would:

- Interfere with the normal effective life and operation of the equipment
- Involve high cost or long lead time for repair
- Reduce fuel and electrical consumption through improved heat transfer efficiency
- Maximize repair and maintenance costs associated with replacement and cleaning of equipment due to scale, corrosion, fouling, or microbiological growth.
- Cause unsightly appearances and/or odors.

The Firm Fixed Price (FFP) portion of the contract has been identified throughout this contract and also includes, but not limited to, the duties, tasks, tools, products, equipment, component replacement, and materials to perform all types of annual, biannual, quarterly, monthly and biweekly testing, inspection, supply of chemical products, deliveries, replacement of filters and lights, the application of chemical products, routine maintenance, minor repair services, leak repairs, routine service calls and callbacks, minor cleaning, minor brushing, minor strainer cleaning, housekeeping, materials, storage of chemicals, correction

of deficiencies, adjustments, consultation, technical expertise, labor, deliveries, schedules, logs, checklists, and reporting to maintain the listed Smithsonian water systems, where no part of the existing water systems have failed to operate or perform as required and specified by the original equipment manufacturer (OEM) in proper working condition, under the base contract.

This Firm Fixed Price (FFP) portion of the contract shall include, but not be limited to, preventive, predictive and reliability centered maintenance, repairs, callbacks, cleaning, minor brushing, minor cleaning, testing, inspections, surveys, legionella tests, ground water tests, support for equipment shutdowns due to building system testing, maintenance, repairs, and certifications of all equipment and water systems specified in the attached equipment inventory. All work shall be in accordance with commercial practices, original equipment manufacturer's specifications (OEM), and all other standards specified in this contract to maintain the water systems and equipment in a safe and reliable operating condition. In addition, the Contractor shall track, maintain, schedule and report all required equipment inventory and performance information and data as requested or required.

The Contractor shall provide their maintenance program in their Technical Proposal for review during the contractor selection process. This should be labeled "Maintenance Plan". The Maintenance Plan should include maintenance, schedules, frequency intervals for each system, inspection, testing, checks, adjustments, lubrication, cleaning, brushing, replacements of parts, deliveries, filters, lights, and components, checklists, etc. to keep the inventoried systems, loops, fountains, pits, and equipment running at satisfactory condition within the terms of the Contract.

The Original Equipment Manufacturer (OEM) recommendations shall be used along with all the most current applicable codes and guidelines to create the maintenance program. These Codes and guidelines shall include but not be limited to the directives, laws, procedures, practices, standards, regulations, guidelines, and handbooks including, but not limited to; The American Society of Testing and Materials (ASTM) D5952-08 Legionella, ASTM D3370-10 Water Testing in Closed Conduits, ATSM D5464-07 and ATSM D1067-16 (PH and Alkalinity Measurements), ATSM D4778-15 Corrosion of Cooling Water in Heat Exchangers, the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), the American National Standards Institute (ANSI) Codes, the National Fire Protection Association (NFPA) Codes, the American National Standards Institute Inc. (NEII), The National Electrical Code (NEC), the International Building Code (IBC), the International Existing Building Code (IEBC), the Occupational Safety and Health Act (OSHA), the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHREA), the Cooling Tower Institute (CTI) Best Practices and Guidelines, the Association of Water Technologies (AWT). The Contractor shall also comply with all Federal, State, City, Local and Smithsonian Institution policies, procedures and directives applicable to all work performed in the terms of this contract.

The data and all pertinent information necessary to create a schedule, intervals, type, kind, inspections, tests, supplies, deliveries, etc. for the Technical Proposal can be found in the attached Inventory:

- Attachment A: Inventory of SI Water Systems.

6.2 Maintenance. The Contractor shall perform all preventive, predictive and reliability centered maintenance work on the equipment listed in the inventory within this contract under Firm Fixed Price (FFP) portion. The maintenance work and services are defined in this contract and includes but is not limited to the duties to perform the maintenance, operation, repairs, modernizations, upgrades, cleaning, painting, lubrication, adjustments, inspection, testing, visual checks, and inspections of the equipment inventory systems within the contract. The Contractor shall perform the necessary work to ensure that each system complies with original equipment manufacture (OEM) specifications, most current required standards of safety and reliability to meet satisfactory operating conditions. The Contractor shall follow a maintenance plan that addresses all aspects of maintenance work to be performed and frequency of performance. The Contractor shall correct all deficiencies identified while performing maintenance as part of the Firm Fixed Price (FFP), and report all such deficiencies and corrective actions to the COTR in accordance with the contract reporting requirements.

- 6.3 Reliability Centered Maintenance.** The Contractor shall utilize Reliability Centered Maintenance (RCM) principles and techniques in their maintenance program under Firm Fixed Price (FFP) portion of this contract. RCM is a mixture of Predictive Maintenance (PdM), Predictive Testing and Inspection (PdT&I) and Proactive Maintenance Measures. These maintenance measures draw upon their respective strengths to maximize facility and equipment operability and efficiency while optimizing required maintenance time, materials, and costs. Root cause failure analysis is considered an essential proactive maintenance element of RCM. An RCM strategy often includes performing a statistical analysis of historical data related to failures to determine the optimal investment of maintenance resources and risk assessment methods to identify those processes or systems that statistically exhibit the greatest chance of catastrophic failure. Once these systems are identified, maintenance programs are tailored to monitor conditions to prevent such failures.
- 6.4 Repair.** The Contractor shall perform repair work on the equipment listed in the inventory within this contract under the Firm Fixed Price (FFP) portion up to the Firm Fixed Price Threshold (FFPT) limit. The repair work and services are defined in this contract and include, but are not limited to correction of deficiencies, fabrication, materials, construction, modifications, upgrades, replacements, adjustments, refurbishment, leaking pipes and tubing, lines, component failures of existing components and subcomponents, materials and parts of systems that operate as originally designed by the original equipment manufacturer; replacement of components, materials and parts of systems that are beyond their useful expected life; damaged beyond repair or obsolete; upgrades to existing components, parts and systems to accommodate functionality lost due to the failure of the components or materials which are no longer available or manufactured, etc. while performing maintenance. Contractor or Smithsonian identified repairs must be started within two (2) days from receipt or discover and completed within five (5) days.
- 6.5 Service Calls and Callbacks.** The Contractor shall provide routine service calls and callback services on the equipment listed in the inventory within this contract under the Firm Fixed Price (FFP) portion. The service calls, callbacks, reporting, and logs are defined in this contract and include, but are not limited to request for repairs, deficiencies, inspections, testing, adjustments, leaks, inefficiencies, etc. for equipment listed within this contract.
- 6.6 Reports, Scheduling, Logs.** The Contractor shall submit all required reports, schedules, checklists, and logs identified within this contract under the Firm Fixed Price (FFP) portion. Specific reports include but are not limited to data identified for performance, progress, scheduling, service calls and callbacks, inspections, testing, etc. and shall be provided to the COTR at the end of each period as specified within this contract.
- 6.7 Weather, Acts of God, Vandalism and Abuse.** The Contractor shall provide repairs required but not limited to the facilities and inventory equipment damaged or effected by inclement weather conditions, power outages, flooding, acts of God and/or acts of vandalism and abuse under the Firm Fixed Price (FFP) portion of this contract up to the Firm Fixed Price Threshold (FFPT).
- 6.8 Wiring Diagrams, Specifications and Schematics.** The Contractor shall provide one set of standard size, legible, specifications, schematic wiring diagrams, and/or schematic drawings for any replaced equipment, parts, pumps, systems, etc. as part of the Firm Fixed Price (FFP) portion of this contract. These specifications are to be applicable to the equipment or systems being replaced and maintained. All diagrams, specifications, schematics, etc. supplied shall become and remain Smithsonian Institution property. The Contractor shall notify the COTR of inventory equipment that does not have any associated information.
- 6.9 Miscellaneous.** The contractor shall provide miscellaneous work as part of the Firm Fixed Price (FFP) portion of this contract to include but not limited to painting and cleaning of equipment, tanks, walls, and floors within the work, storage or containment areas, occasional unscheduled inspections and and/or surveys, checks to verify any undetermined problems that may arise, etc. or required by the Smithsonian.

7. FIRM FIXED PRICE THRESHOLD LIMITATION FOR REPAIRS (FFPT)

The Contractor shall include within the Firm Fixed Price (FFP) portion of their costs of the contract requirements to perform the work for, but not limited to, all repairs, maintenance, modifications, correction

of deficiencies, adjustments, upgrades, fabrications, refurbishments, replacements, construction, materials, components, parts, systems, service calls and callbacks, testing, inspections, reporting, etc. up to the Firm Fixed Price Threshold (FFPT) of \$500.00, per incident, per repair, per piece of equipment or system in the inventory. These costs are inclusive of all direct costs for labor, materials, shipping, transportation/delivery, tools, and equipment. The Contractor shall also be responsible for the replacement of all parts that are considered obsolete by the original equipment manufacturer, vandalized, or abused, weather, flood, power outage, earthquake, lightning strikes, or an act of God up to the FFPT. In those cases where total cost is less than the FFPT limitation, the Contractor shall cover the total cost. In those cases where the total cost exceeds the FFPT limitations, the Contractor shall assume all costs associated with the work up to the FFPT limitation and the Smithsonian Institution will pay for the work more than \$500.00 per incident, per repair, per piece of equipment or system inventory. Repairs shall be pursued by the Contractor until resolved. If the repair will exceed the FFPT limitation, the Contractor shall contact the COTR immediately to provide a proposal, support and back up documentation in writing. A separate Delivery/Task Order will be provided to the Contractor to cover costs more than the FFPT. All costs associated with the repair shall be substantiated by the Contractor with support documentation to include, but not limited to payroll records, material invoices and any other documents that support the claimed excess costs.

8. INDEFINITE DELIVERY INDEFINITE QUANTITY PORTION (IDIQ)

8.1 General Intent. The Smithsonian Institution intends to accomplish work under this section of the contract by minimizing the Smithsonian Institution's development of plans, SOW, and specifications and to maximize the use of the Contractor's expertise. The Contractor shall include sketches, drawings, specifications, submittals, and support documentation within their scope of work provided to the COTR to clarify the work requirements.

The Indefinite Delivery Indefinite Quantity (IDIQ) contract portion is a time and materials sum that has been identified throughout this contract and also includes, but is not limited to, the duties to perform all types of major repairs, overhauls, replacements, correction of deficiencies, emergency service calls and/or callbacks outside of the normal working hours of the contract depending upon the circumstance and determined by the COTR, overtime charges, installations, construction, modifications, fabrications, upgrades, application of dyes and flush agents, glycol loss due to owner or other external influence beyond a normal percentage of loss, major cleaning and brushing, training classes, testing, inspections, and labor that the Smithsonian Institution requests or requires that may be outside of the scope of the Firm Fixed Price (FFP) portion of the base contract; deficiencies that the Contractor identifies as part of their scheduled interval testing and inspections during the scope of the Firm Fixed Price (FFP) portion of the base contract that would be performed as a preventative measure to prevent a future failures to the existing water system; costs that exceed the Firm Fixed Price Threshold (FFPT); requests for new services, replacement systems or new installations by the Smithsonian for water system related services or supplies that may not be listed in the inventoried SI water systems; or where whole or parts of the listed Smithsonian water systems have failed to operate or perform as required and specified by the original equipment manufacturer (OEM) in proper working condition, under the base contract.

8.2 Upgrades and Modernizations. The Smithsonian Institution intends to rely on the expertise of the Contractor to determine, provide recommended water treatment system equipment improvements, replacements, statements of work (SOW), new construction and major repairs that are deemed outside the scope of the Firm Fixed Price (FFP) portion of the contract. The Smithsonian may at times also request such information, SOW, and proposals from the Contractor. The Smithsonian makes no guarantee of award regarding these requests and recommendations. Submission of proposed projects to the COTR shall in no way obligate the Smithsonian Institution to pursue the work, or to use a specific Contractor if the work is implemented.

8.3 Delivery/Task Orders. Specific tasks, projects, services, repairs, and supplies may be required or ordered by an individual Delivery/Task Order under the Indefinite Delivery Indefinite Quantity (IDIQ) contract portion. Award of the Delivery/Task Order shall be on a time and material, or fixed price basis identified on the award. Whenever the Smithsonian has a requirement for services or supplies to be performed under this portion of the contract, the Contracting Officer or COTR shall notify the Contractor for a request for a

proposal (RFP). The Contractor shall provide a statement of work (SOW) which shall include, but not be limited to: the nature, details, and quantity of the work to be performed; materials or supplies needed; the location of the work; the duration of work taking place; specifications; requirements; cost; duration the proposal is good thru; and any other information requested in the RFP.

8.4 Proposals. The Contractor shall prepare all proposals for IDIQ work utilizing the terms and conditions (T&C) of this contract, the negotiated and accepted approved unit labor rates and material markup within this contract. Proposals shall provide sufficient breakdowns to review labor, materials, equipment, mark-ups, back-up and support documentation, subcontractors' costs, etc. to compare to the negotiated rates within this contract. These rates will be applied to all work required for or by the Smithsonian that is not covered in the Firm Fixed Price (FFP) portion of the contract or exceed the Firm Fixed Price Threshold (FFPT). Projects under this section shall be negotiated with in regard to labor, materials and equipment required to accomplish specific tasks.

8.5 Acceptance, Notice to Proceed and Payment. If the Smithsonian Institution agrees to the Statement of Work and the Contractor's Proposal, a notice to proceed (NTP) shall be issued along with the Delivery/Task Order simultaneously to begin the work, order materials, obtain subcontractors, reduce lead time, etc. without delay. The Smithsonian Institution may also modify the contract or issue a separate Delivery/Task Order and notice to proceed (NTP) if conditions exist; due to cost or procedures associated with the project; special circumstances warrant a separate Delivery/Task Order; in the event of an emergency, urgent or compelling circumstances; or when the Smithsonian Institution's or the Contractor's interests demand that the Contractor be given a commitment so that work can start immediately, or materials can be ordered from vendors.

Pay applications and/or lump sum payments shall be permitted. All costs associated with the Delivery/Task Order shall be substantiated by the Contractor with support documentation to include but not limited to payroll records, material invoices and any other documents that support the claimed costs.

Attachments:

A. Inventory

Water Treatment Inventory List								
Zone	Building	Address/Location	Equipment Type	Quantity	Avg Annual Load %	Volume/gal	Coupon Rack	Comment
South Mall	Freer	1050 Independence Ave. S.W. Washington DC 20560	2 - 40 HP Steam Generators/Water Softener	2	~40%			
South Mall	Freer	1050 Independence Ave. S.W. Washington DC 20560	Hot Water Loop	1		~2000	1	
South Mall	Freer	1050 Independence Ave. S.W. Washington DC 20560	Sewer Injection Pits	2				
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	2 - 40 HP Steam Generators/Water Softener	2	~40%			
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Hot Water Loop	1		~5000		
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Chilled Water Loop	1		~5000		
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Sewer Injection Pits	5				
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Cascade Fountain	1				
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Oriental Fountain	1				
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	Courtyard Fountain	1				Provide Product Only/Manual Installed by Staff
South Mall	Quad	1100 Independence Ave. S.W. Washington DC 20560	African Art Fountain	1				Provide Product Only/Manual Installed by Staff
South Mall	HMSG -Hirshhorn Museum Sculpture	7th St. & Independence Ave. S.W Washington DC 20560	Hot Water Loops	4		~1500 each		Molybdate Treatment
South Mall	HMSG -Hirshhorn Museum Sculpture	7th St. & Independence Ave. S.W Washington DC 20560	Plaza Fountain	1				
South Mall	HMSG -Hirshhorn Museum Sculpture	7th St. & Independence Ave. S.W Washington DC 20560	Sculpture Garden Fountain	1				
South Mall	HMSG -Hirshhorn Museum Sculpture	7th St. & Independence Ave. S.W Washington DC 20560	Sewer Injection Pits	3				
East Mall	NMAI	4th & Independence Ave. S.W Washington DC 20560	3 - 60 HP Steam Generators/Condensate Return/FW/Softner	3	~33%			
East Mall	NMAI	4th & Independence Ave. S.W Washington DC 20560	3 - Hot Water Boilers/Hot Water Loop	1		~10,000		
East Mall	NMAI	4th & Independence Ave. S.W Washington DC 20560	Sewer Injection Pit	1				
East Mall	NMAI	4th & Independence Ave. S.W Washington DC 20560	Fountain	1				
East Mall	NMAI	4th & Independence Ave. S.W Washington DC 20560	Pond	1				
East Mall	Hazy	14390 Air & Space Museum Parkway Chantilly Va. 20560	2 x 400 HP Steam Boilers/1 x 200 HP Steam Boiler/Condensate/FW/Softners	2	~33%			
East Mall	Hazy	14390 Air & Space Museum Parkway Chantilly Va. 20560	Hot Water Loop	1		~10,000		Molybdate Treatment
East Mall	Hazy	14390 Air & Space Museum Parkway Chantilly Va. 20560	2 X 910 Ton Centrifugal Chillers/2 - 375 Ton Screw Chillers/28,000 Gal. Glycol Ice Farm	1	~30-35%		1	
East Mall	Hazy	14390 Air & Space Museum Parkway Chantilly Va. 20560	Glycol Chill Water Loop	1				
East Mall	Hazy	14390 Air & Space Museum Parkway Chantilly Va. 20560	8,000 Gallon Fountain	1				Provide Product Only/Manually Installed by Staff
East Mall	Hazy Expansion	14390 Air & Space Museum Parkway Chantilly Va. 20560	Cooling tower - 2 x 250 ton Trane chillers	1	~30%		1	
East Mall	Hazy Expansion	14390 Air & Space Museum Parkway Chantilly Va. 20560	Hot Water loop	1		~3000	1	Molybdate Treatment
East Mall	Hazy Expansion	14390 Air & Space Museum Parkway Chantilly Va. 20560	Chilled water loop	1		~3000	1	Molybdate Treatment
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	3,600 Ton Cooling Tower/4 - York Chillers	1	~30-35%		1	
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	Chilled Water Loop	1		23,000	1	
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	2 - Steam Boilers/2- Softeners	2				
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	Hot Water Loops	5		~1500 each		
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	Sewer Injection Pits	3				

Zone	Building	Address/Location	Equipment Type	Quantity	Avg Annual Load %	Volume/gal	Coupon Rack	Comment
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	Caulder Fountain	1				
West Mall	NMAH	14th & Constitution Ave. N.W. Washington DC 20560	North Fountain	1				
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	2,500 Ton Cooling Tower/3 - York Chillers	1	~30-35%		1	
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Chilled Water Loops	2		~15,000 total	1	
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Steam Boilers/FW/RO/Softner	3	~33%			
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Glycol Chilled Water Loops	2		~1,500 each		
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Hot Water Loop	1		~20,000	1	
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Ground Water System	1				
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	Oculus Fountain	1				
West Mall	NMAAHC	1400 Constitution Ave. N.W. Washington DC 20560	South Fountain	1				
North Mall	NMNH	1000 Constitution Ave. N.W. Washington DC 20560	5,000 Ton Cooling Tower/5 - Chillers	1	~30-35%		1	
North Mall	NMNH	1000 Constitution Ave. N.W. Washington DC 20560	Chilled Water Loop	1		~35,000		Non-Nitrite Treatment
North Mall	NMNH Butterfly Exhibit	1000 Constitution Ave. N.W. Washington DC 20560	RO System	1				
North Mall	NMNH Lab	1000 Constitution Ave. N.W. Washington DC 20560	RO System	1				
North Mall	NMNH	1000 Constitution Ave. N.W. Washington DC 20560	Hot Water Loops	9		~1500 each	2	
North Mall	NMNH	1000 Constitution Ave. N.W. Washington DC 20560	Sewer Injection Pits	2				
North Mall	NMNH	1000 Constitution Ave. N.W. Washington DC 20560	Humidity Water Softeners	5				Provide Softner Salt Only/Manually Installed by Staff
Gallery Place	DWRC	8th & F Street N.W. Washington DC 20560	2 x 1,000 Ton Cooling Tower/2 - York Chillers	1	~30-35%		1	
Gallery Place	DWRC	8th & F Street N.W. Washington DC 20560	Chilled Water Loop	1		~12,500	1	
Gallery Place	DWRC	8th & F Street N.W. Washington DC 20560	Hot Water loop	2		~15,000 total	1	
Gallery Place	DWRC	8th & F Street N.W. Washington DC 20560	RODI Systems	2				
Gallery Place	DWRC	8th & F Street N.W. Washington DC 20560	SCRM Fountain	1				
Gallery Place	Postal Museum	8th & F Street N.W. Washington DC 20560	Steam Boiler/Softner	1				
Gallery Place	Postal Museum	8th & F Street N.W. Washington DC 20560	Hot Water Loop	1		~1,000		
Gallery Place	Renwick Museum	1661 Pennsylvania Ave. N.W. Washington DC 20560	300 Ton Cooling Tower/Chiller	1	~35%		1	
Gallery Place	Renwick Museum	1661 Pennsylvania Ave. N.W. Washington DC 20560	Chilled Water Loop	1		~3000	1	
Gallery Place	Renwick Museum	1661 Pennsylvania Ave. N.W. Washington DC 20560	Hot Water Loop	1		~2500		
Gallery Place	Renwick Museum	1661 Pennsylvania Ave. N.W. Washington DC 20560	Softener/RO System	1				
UNWZ	NZP Boiler Plant	3000 Connecticut Ave. N.W. Washington DC 20560	3 x 400 HP Steam Boiler/Condensate Return/FW/Softners	3	~30%			
UNWZ	NZP Commissary	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1	~50%			Used for Refrigeration Systems
UNWZ	NZP Commissary	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Water Loop	1		~5000		
UNWZ	NZP Research	3000 Connecticut Ave. N.W. Washington DC 20560	80 HP Steam Boiler/Condensate/FW	1	~25%			
UNWZ	NZP Research	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1	~35%			
UNWZ	NZP Research	3000 Connecticut Ave. N.W. Washington DC 20560	Dual Temperature Water Loop	1		~1,500		

Zone	Building	Address/Location	Equipment Type	Quantity	Avg Annual Load %	Volume/gal	Coupon Rack	Comment
UNWZ	NZP Visitor Center	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1				
UNWZ	NZP Visitor Center	3000 Connecticut Ave. N.W. Washington DC 20560	Dual Temperature Water Loop	1		~1,500		
UNWZ	NZP Lion & Tiger	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1				
UNWZ	NZP Lion & Tiger	3000 Connecticut Ave. N.W. Washington DC 20560	Dual Temperature Water Loop	1		~1,500		
UNWZ	NZP GSB	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1				
UNWZ	NZP GSB	3000 Connecticut Ave. N.W. Washington DC 20560	Dual Temperature Water Loop	1		~1,500		
UNWZ	NZP Reptile House	3000 Connecticut Ave. N.W. Washington DC 20560	200 Ton Cooling Tower	1				
UNWZ	NZP Reptile House	3000 Connecticut Ave. N.W. Washington DC 20560	Dual Temperature Water Loop	1		~1,500		
UNWZ	NZP Cheetah	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Sloth Bear	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Sloth Bear	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Closed Loop Condenser	1				
UNWZ	NZP Asian Trail/Otter	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Panda	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Panda	3000 Connecticut Ave. N.W. Washington DC 20560	Chilled Water Loop (Building)	1		<2,500		
UNWZ	NZP Panda	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Chilled Water Loop (Grotto)	2		~1000 each		
UNWZ	NZP Small Mammal House	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Great Ape House	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Think Tank	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Think Tank	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Chilled Water Loop	1		<1,500		
UNWZ	NZP Police Station	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Manr Restaurant	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Manre Restaurant	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Chilled Water Loop	1		<1,500		
UNWZ	NZP Amazonia	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop (Building)	1		<1,500		
UNWZ	NZP Amazonia	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop (Tanks)	1		<1,500		
UNWZ	NZP Amazonia	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Closed Loop	1		<1,500		
UNWZ	NZP Lemur Island	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Seal & Sea Lion	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<2,500		
UNWZ	NZP Seal & Sea Lion	3000 Connecticut Ave. N.W. Washington DC 20560	Chilled Water Loop (Building)	1		<2,500		
UNWZ	NZP Seal & Sea Lion	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Chilled Water Loop (Pools)	1				
UNWZ	NZP Elephant House	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Necropsy	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Quarantine	3000 Connecticut Ave. N.W. Washington DC 20560	Hot Water Loop	1		<1,500		
UNWZ	NZP Vet Hospital	3000 Connecticut Ave. N.W. Washington DC 20560	Glycol Chilled Water Loop	1				
UNWZ	SCBI Vet Hospital	1500 Remount Rd. Front Royal Va. 22630	Glycol Chilled Water Loop	1				As Needed
UNWZ	SCBI Boiler Shack	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only

Zone	Building	Address/Location	Equipment Type	Quantity	Avg Annual Load %	Volume/gal	Coupon Rack	Comment
UNWZ	SCBI Old Admin Building	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only
UNWZ	SCBI Office Annex	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only
UNWZ	SCBI Dormatory	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only
UNWZ	SCBI Cottage	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only
UNWZ	SCBI Stone House	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Two Visits - Winter Months Only
UNWZ	SCBI Warren House	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Two Visits - Winter Months Only
UNWZ	SCBI Building 1	1500 Remount Rd. Front Royal Va. 22630	Hot Water Loop	1		<1,000		Monthly - Winter Months Only
UNWZ	SCBI Building 1	1500 Remount Rd. Front Royal Va. 22630	Glycol Geothermal Loop	1				As Needed
UNWZ	SCBI Education Building	1500 Remount Rd. Front Royal Va. 22630	Glycol Geothermal Loop	1				As Needed
SUZ	MSC (Main Plant)	4210 Silver Hill Rd. Suitland Md. 20746	3 - 250 HP Steam Boilers/Condensate/FW/Softners	3	~33%			
SUZ	MSC (Main Plant)	4210 Silver Hill Rd. Suitland Md. 20746	Hot Water Loop	1		~10,000		
SUZ	MSC (Main Plant)	4210 Silver Hill Rd. Suitland Md. 20746	2000 Ton Cooling Tower/4 - Chillers	1	~30-35%		1	High-Cycle System with 50% Water Softener Makeup
SUZ	MSC (Main Plant)	4210 Silver Hill Rd. Suitland Md. 20746	Chilled Water Loop	1		~12000		
SUZ	MSC (Pod 5)	4210 Silver Hill Rd. Suitland Md. 20746	2 - 100 HP Steam Boilers/Condensate/FW	2	~40%			
SUZ	MSC (Pod 5)	4210 Silver Hill Rd. Suitland Md. 20746	Hot Water Loop	1		~1500		
SUZ	MSC (Pod 5)	4210 Silver Hill Rd. Suitland Md. 20746	Chilled Water Loop	1		~1500		
SUZ	MSC (Pod3)	4210 Silver Hill Rd. Suitland Md. 20746	150 Ton Cooling Tower	1	~30%			
SUZ	MSC (Pod3)	4210 Silver Hill Rd. Suitland Md. 20746	Chilled Water Loop	1		~2000		
SUZ	MSC (Pod3)	4210 Silver Hill Rd. Suitland Md. 20746	Closed Loop Condenser	1		~2000		
SUZ	MSC (Pod 3)	4210 Silver Hill Rd. Suitland Md. 20746	Hot Water Loop	1		~2500		
SUZ	CRC	4220 Silver Hill Rd. Suitland Md. 20746	2 - 200 HP Steam Boilers/1 - 80 HP Steam Boiler/Condensate/FW/Softner	3	~30%			
SUZ	CRC	4220 Silver Hill Rd. Suitland Md. 20746	Hot Water Loop	1		~5000	1	
SUZ	CRC	4220 Silver Hill Rd. Suitland Md. 20746	800 Cooling Tower/2 - Chillers	1	~30-35%		1	High-Cycle System with 50% Water Softener Makeup
SUZ	CRC	4220 Silver Hill Rd. Suitland Md. 20746	Chilled Water Loop	1		~4500	1	
SUZ	CRC	4220 Silver Hill Rd. Suitland Md. 20746	Fountain	1				Provide Product Only/Manually Installed by Staff
SUZ	New Greenhouse	4210 Silver Hill Rd. Suitland Md. 20746	RO System/Softener	1				
SUZ	New Greenhouse	4210 Silver Hill Rd. Suitland Md. 20746	Hot Water Loop	1		<1000		
SUZ	New Greenhouse	4210 Silver Hill Rd. Suitland Md. 20746	Swamp Coolers	14				Provide Product Only/Manually Installed by Staff
New Zone	Anacostia	1901 Fort Place S.E. Washington DC 20560	Hot Water Loop	1		<2500		
New Zone	Anacostia	1901 Fort Place S.E. Washington DC 20560	Glycol Chill Water Loop	1				
New Zone	SERC Mathias Lab	647 Contees Wharf Rd. Edgewater Md. 21037	300 Ton Cooling Tower	1	~15%			
New Zone	SERC Mathias Lab	647 Contees Wharf Rd. Edgewater Md. 21037	Closed Loop Condenser	1		~10,000		Geothermal Loop
New Zone	SERC Mathias Lab	647 Contees Wharf Rd. Edgewater Md. 21037	Chill Water Loop	1		~3500		
New Zone	SERC Mathias Lab	647 Contees Wharf Rd. Edgewater Md. 21037	Hot Water Loop	1		~5000		

Zone	Building	Address/Location	Equipment Type	Quantity	Avg Annual Load %	Volume/gal	Coupon Rack	Comment
New Zone	SERC Admin Building	647 Contees Wharf Rd. Edgewater Md. 21037	Hot Water Loop	1		<1500		
New Zone	SERC Admin Building	647 Contees Wharf Rd. Edgewater Md. 21037	Chill Water Loop	1		<1500		
New Zone	CHDM	2E 91st St. New York NY 10128	3 - Cooling Towers - 2 Condenser Water Systems - 500 tons	2	~25%		1	
New Zone	CHDM	2E 91st St. New York NY 10128	Chilled Water Loop	1		~3000		
New Zone	CHDM	2E 91st St. New York NY 10128	2 - Steam Generators/Condensate/FW/Softenor	2	~40%			Water Treatment and Provide Softener Salt
New Zone	CHDM	2E 91st St. New York NY 10128	Hot Water Loop	1		~3,500		
New Zone	NMAI/Customs House	1 Bowling Green New York NY 10004	700 Ton Cooling Tower/ 4 - Chillers	1	~25%		1	
New Zone	NMAI/Customs House	1 Bowling Green New York NY 10004	Chilled Water Loop	1		~4200		
New Zone	NMAI/Customs House	1 Bowling Green New York NY 10004	Hot Water Loop	1		~5000		
Totals				209				