metroWASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
600 Fifth Street, NW, Washington, DC 20001-2651

AMENDMENT OF SOLICITATION / MODIFICATION OF CONTRACT

1. AMENDMENT/MODIFICATION	2. EFFECTIVE DATE
A04	March 7, 2018
3. ISSUED BY PURCHASING SECTION Diane W. Graham Department of Procurement & Materials Room 3G-01 600 Fifth Street, N.W. Washington, DC 20001	**4. ADMINISTERED BY (If other than block 3)**

5. CONTRACTOR NAME AND ADDRESS

(Street, city, county, state, and Zip Code) POTENTITAL BIDDERS

6. FORM TYPE (Check only one)

■ AMENDMENT OF SOLICITATION NO. CQ18094/DG

DATE February 7, 2018 (See block 7)

☐ MODIFICATION OF CONTRACT/ORDER NO. _____

DATE _____ (See block 9)

7. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

■ The above numbered solicitation is amended as set forth in block 10. The hour and date specified for receipt of Offers ■ is extended, ☐ is not extended. Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods (a) By signing and returning 1 copies of this amendment; (b) by acknowledging receipt of this amendment on each copy of the offer submitted; or (c) by separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

8. ACCOUNTING AND APPROPRIATION DATA (If required)

9. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(1☐ This Change Order is issued pursuant to _____
The Changes set forth in block 10 are made to the above numbered contract/order.

(b☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 10.

©☐ This Supplemental Agreement is entered into pursuant to authority of _____
It modifies the above numbered contract as set forth in block 10.

10. DESCRIPTION OF AMENDMENT/MODIFICATION

AMENDMENT A04 TO POTENTIAL BIDDERS (SEE ATTACHED REVISED PRICE SCHEDULE) TO INCLUDE REVISIONS TO PAGE 90 – (BULLET 9) OF SCOPE OF WORK

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

Except as provided herein, all terms and conditions of the document referenced in block 6, as heretofore changed, remain unchanged and in full force and effect.

11. ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS MODIFICATION AND RETURN 1 COPY TO ISSUING OFFICE.	■ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT
12. NAME OF CONTRACTOR/OFFICE BY _____ (Signature of person authorized to sign)	15. WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY BY F. R. Voelm (Signature of Contracting Officer)

13. NAME AND TITLE OF SIGNER (Type or print)	14. DATE SIGNED	16. NAME OF CONTRACTING OFFICER (Type or print)	17. DATE SIGNED
		Frederick R. Voelm	3/7/2018

PRICE SCHEDULE - BASE YEAR

Line Item No:	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
1	Anacostia	1800 Anacostia Drive, SE, Washington, DC 20020	1		
2	Ballston-MU	3930 Fairfax Drive, Arlington, VA 22203	1		
3	Benning Road	4500 Benning Rd NE, Washington, DC 20019	1		
4	Bethesda	7450 Wisconsin Ave, Bethesda, MD 20814	1		
5	Capitol Heights	5500 Davey Street, Capitol Heights, Maryland 20743	1		
6	Clarendon (2)	2750 Clarendon Blvd, Arlington, VA 22201	2		
7	Columbia Heights	3030 14th St NW, Washington, DC 20009	1		
8	Congress Heights	13th Street & Alabama Avenue, SE Washington, DC 20032	1		
9	Crystal City	1750 South Clark St., Arlington, VA 22240	1		
10	Farragut North	1116 Connecticut Ave NW, Washington, DC 20036	1		
11	Farragut West	900 18th Street, NW Washington, DC 20006	1		
12	Federal Center SW	400 2nd St SW, Washington, DC 20515	1		
13	Forest Glen	9730 Georgia Ave, Silver Spring, MD 20910	1		
14	Georgia Avenue-Petworth	3670 New Hampshire Ave NW, Washington, DC 20010	1		
15	Glenmont	12501 Georgia Ave, Silver Spring, MD 20906	1		
16	L'Enfant Plaza	7th & D SW Washington, DC 20407 (on General Services Administration Building)	1		
17	Medical Center	8810 Rockville Pike, Bethesda, MD 20892	1		

PRICE SCHEDULE - BASE YEAR (CONTINUATION SHEET

Line Item No.	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
18	Metro Center (2)	775 12th Street, NW Washington, DC 20005	2		
19	Mt Vernon Sq 7th St-Convention Center	700 M St NW, Washington, DC 20001	1		
20	Navy Yard (2)	1101 Half Street, SE Washington, DC 20003	2		
21	Pentagon City	601 Army-Navy Drive, Arlington, VA 22202	1		
22	Potomac Ave	529 13th Street, SE Washington, DC 20003	1		
23	Rosslyn	1850 N Moore St, Arlington, VA 22209	1		
24	Stadium-Armory	19th & C Streets, SW Washington, DC 20240	1		
25	Tenleytown-AU (2)	4202 Ellicott St NW, Washington, MD 20016	2		
26	U Street/Cardoza (2)	1220R U Street, NW Washington, DC 20009	2		
27	Union Station	645 First St NE, Washington, DC 20002	1		
28	Van Ness-UDC	4200F Connecticut Ave NW, Washington, DC 20008	1		
29	Wheaton	11171 Georgia Ave, Silver Spring, MD 20902	1		
30	Woodley Park	3103 Connecticut Avenue, NW Washington, DC 20008	1		
31	All Locations	Legionella Testing of Each Chiller Cooling Tower (35 Chiller Cooling Towers **twice** during the Active Period)***	35		

BASE YEAR TOTAL PROPOSED PRICE $_____

_____
Authorized Signature

_____
Company Name

_____
Date

PRICE SCHEDULE – OPTION YEAR ONE

Line Item No:	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
1	Anacostia	1800 Anacostia Drive, SE, Washington, DC 2002	1		
2	Ballston-MU	3930 Fairfax Drive, Arlington, VA 22203	1		
3	Benning Road	4500 Benning Rd NE, Washington, DC 20019	1		
4	Bethesda	7450 Wisconsin Ave, Bethesda, MD 20814	1		
5	Capitol Heights	5500 Davey Street, Capitol Heights, Maryland	1		
6	Clarendon (2)	2750 Clarendon Blvd, Arlington, VA 22201	2		
7	Columbia Heights	3030 14th St NW, Washington, DC 20009	1		
8	Congress Heights	13th Street & Alabama Avenue, SE Washington, DC	1		
9	Crystal City	1750 South Clark St., Arlington, VA 22240	1		
10	Farragut North	1116 Connecticut Ave NW, Washington, DC 20036	1		
11	Farragut West	900 18th Street, NW Washington, DC	1		
12	Federal Center SW	400 2nd St SW, Washington, DC 20515	1		
13	Forest Glen	9730 Georgia Ave, Silver Spring, MD 20910	1		
14	Georgia Avenue - Petworth	3670 New Hampshire Ave NW, Washington, DC 20010	1		
15	Glenmont	12501 Georgia Ave, Silver Spring, MD 20906	1		
16	L'Enfant Plaza	7th & D SW Washington, DC (on General Services Administration Building)	1		
17	Medical Center	8810 Rockville Pike, Bethesda, MD 20892	1		

PRICE

SCHEDULE – OPTION YEAR ONE (CONTINUATION SHEET)

Line Item No.	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
18	Metro Center (2)	775 12th Street, NW Washington, DC	2		
19	Mt Vernon Sq 7th St-Convention Center	700 M St NW, Washington, DC 20001	1		
20	Navy Yard (2)	1101 Half Street, SE Washington, DC	2		
21	Pentagon City	601 Army-Navy Drive, Arlington, VA	1		
22	Potomac Ave	529 13th Street, SE Washington, DC	1		
23	Rosslyn	1850 N Moore St, Arlington, VA 22209	1		
24	Stadium-Armory	19th & C Streets, SW Washington, DC	1		
25	Tenleytown-AU (2)	4202 Ellicott St NW, Washington, MD 20016	2		
26	U Street/Cardoza (2)	1220R U Street, NW Washington, DC	2		
27	Union Station	645 First St NE, Washington, DC 20002	1		
28	Van Ness-UDC	4200F Connecticut Ave NW, Washington, DC 20008	1		
29	Wheaton	11171 Georgia Ave, Silver Spring, MD 20902	1		
30	Woodley Park	3103 Connecticut Avenue, NW Washington, DC	2		
31	All Locations	Legionella Testing of Each Chiller Cooling Tower (35 Chiller Cooling Towers **twice** during the Active Period)***	35		

OPTION YEAR ONE TOTAL PROPOSED PRICE $_____

_____
Authorized Signature

_____
Company Name

_____
Date

PRICE SCHEDULE – OPTION YEAR TWO

Line Item No:	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
1	Anacostia	1800 Anacostia Drive, SE, Washington, DC 2002	1		
2	Ballston-MU	3930 Fairfax Drive, Arlington, VA 22203	1		
3	Benning Road	4500 Benning Rd NE, Washington, DC 20019	1		
4	Bethesda	7450 Wisconsin Ave, Bethesda, MD 20814	1		
5	Capitol Heights	5500 Davey Street, Capitol Heights, Maryland	1		
6	Clarendon (2)	2750 Clarendon Blvd, Arlington, VA 22201	2		
7	Columbia Heights	3030 14th St NW, Washington, DC 20009	1		
8	Congress Heights	13th Street & Alabama Avenue, SE Washington, DC	1		
9	Crystal City	1750 South Clark St., Arlington, VA 22240	1		
10	Farragut North	1116 Connecticut Ave NW, Washington, DC 20036	1		
11	Farragut West	900 18th Street, NW Washington, DC	1		
12	Federal Center SW	400 2nd St SW, Washington, DC 20515	1		
13	Forest Glen	9730 Georgia Ave, Silver Spring, MD 20910	1		
14	Georgia Avenue-Petworth	3670 New Hampshire Ave NW, Washington, DC 20010	1		
15	Glenmont	12501 Georgia Ave, Silver Spring, MD 20906	1		
16	L'Enfant Plaza	7th & D SW Washington, DC (on General Services Administration Building)	1		
17	Medical Center	8810 Rockville Pike, Bethesda, MD 20892	1		

PRICE SCHEDULE – OPTION YEAR TWO (CONTINUATION SHEET)

Line Item No.	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
18	Metro Center (2)	775 12th Street, NW Washington, DC	2		
19	Mt Vernon Sq 7th St-Convention Center	700 M St NW, Washington, DC 20001	1		
20	Navy Yard (2)	1101 Half Street, SE Washington, DC	2		
21	Pentagon City	601 Army-Navy Drive, Arlington, VA	1		
22	Potomac Ave	529 13th Street, SE Washington, DC	1		
23	Rosslyn	1850 N Moore St, Arlington, VA 22209	1		
24	Stadium-Armory	19th & C Streets, SW Washington, DC	1		
25	Tenleytown-AU (2)	4202 Ellicott St NW, Washington, MD 20016	2		
26	U Street/Cardoza (2)	1220R U Street, NW Washington, DC	2		
27	Union Station	645 First St NE, Washington, DC 20002	1		
28	Van Ness-UDC	4200F Connecticut Ave NW, Washington, DC 20008	1		
29	Wheaton	11171 Georgia Ave, Silver Spring, MD 20902	1		
30	Woodley Park	3103 Connecticut Avenue, NW Washington, DC	1		
31	All Locations	Legionella Testing of Each Chiller Cooling Tower (35 sites **twice** during the Active Period)***	35		

OPTION YEAR TWO TOTAL PROPOSED PRICE $_____

_____
Authorized Signature

_____
Company Name

_____
Date

PRICE SCHEDULE – OPTION YEAR THREE

Line Item No:	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
1	Anacostia	1800 Anacostia Drive, SE, Washington, DC 2002	1		
2	Ballston-MU	3930 Fairfax Drive, Arlington, VA 22203	2		
3	Benning Road	4500 Benning Rd NE, Washington, DC 20019	1		
4	Bethesda	7450 Wisconsin Ave, Bethesda, MD 20814	1		
5	Capitol Heights	5500 Davey Street, Capitol Heights, Maryland	1		
6	Clarendon (2)	2750 Clarendon Blvd, Arlington, VA 22201	2		
7	Columbia Heights	3030 14th St NW, Washington, DC 20009	1		
8	Congress Heights	13th Street & Alabama Avenue, SE Washington, DC	1		
9	Crystal City	1750 South Clark St., Arlington, VA 22240	1		
10	Farragut North	1116 Connecticut Ave NW, Washington, DC 20036	1		
11	Farragut West	900 18th Street, NW Washington, DC	1		
12	Federal Center SW	400 2nd St SW, Washington, DC 20515	1		
13	Forest Glen	9730 Georgia Ave, Silver Spring, MD 20910	1		
14	Georgia Avenue-Petworth	3670 New Hampshire Ave NW, Washington, DC 20010	1		
15	Glenmont	12501 Georgia Ave, Silver Spring, MD 20906	1		
16	L'Enfant Plaza	7th & D SW Washington, DC (on General Services Administration Building)	1		
17	Medical Center	8810 Rockville Pike, Bethesda, MD 20892	1		

PRICE

SCHEDULE – OPTION YEAR THREE (CONTINUATION SHEET)

Line Item No.	Location of Chiller Plant ****	Address	Quantity of Water Treatment Systems	Unit Price (per Active Month)*	Extended Price (Unit Price X 6 Months)**
18	Metro Center (2)	775 12th Street, NW Washington, DC	2		
19	Mt Vernon Sq 7th St-Convention Center	700 M St NW, Washington, DC 20001	1		
20	Navy Yard (2)	1101 Half Street, SE Washington, DC	2		
21	Pentagon City	601 Army-Navy Drive, Arlington, VA	1		
22	Potomac Ave	529 13th Street, SE Washington, DC	1		
23	Rosslyn	1850 N Moore St, Arlington, VA 22209	1		
24	Stadium-Armory	19th & C Streets, SW Washington, DC	1		
25	Tenleytown-AU (2)	4202 Ellicott St NW, Washington, MD 20016	2		
26	U Street/Cardoza (2)	1220R U Street, NW Washington, DC	2		
27	Union Station	645 First St NE, Washington, DC 20002	1		
28	Van Ness-UDC	4200F Connecticut Ave NW, Washington, DC 20008	1		
29	Wheaton	11171 Georgia Ave, Silver Spring, MD 20902	1		
30	Woodley Park	3103 Connecticut Avenue, NW Washington, DC	1		
31	All Locations	Legionella Testing (35) Sites (twice during the Active Period)***	35		

OPTION YEAR THREE TOTAL PROPOSED PRICE $_____

_____
Authorized Signature

_____
Company Name

_____
Date

TOTAL BID PRICE SCHEDULE

Period of Performance	Total Bid Price
Base Year	$
Option Year One (1)	$
Option Year Two (2)	$
Option Year Three (3)	$
Two Legionella Tests for (35) Water Treatment System Locations (during the Active Period)***	$
TOTAL BID PRICE TO INCLUDE Base Year, Option Years 1, 2, 3 and Legionella Testing of thirty-five (35) Chiller sites twice during the Active Period.	$

_____
Authorized Signature

_____
Company Name

_____
Date

NOTE:

*Unit Price must be fully loaded, meaning that they must include all direct and indirect costs for performing these services, including but not limited to direct labor costs, install, deinstall, overhead, general and administrative (G&A) costs, material, travel, insurance, expenses associated with compliance with Federal, state or local laws or regulatory requirements, and profit.

**The Extended Price is calculated by multiplying the Unit Price X 6 months (Active Period). This will represent the total yearly cost to include both the active and inactive periods.

***The Extended Price of Legionella Testing is calculated by multiplying Unit Price X 2. This will represent testing of thirty-five (35) water treatment sites (twice during the active period).

**** See Chiller System Tonnage and Quantity for Reference Purposes on Page 95-96.

PART III
SCOPE OF WORK

INTRODUCTION

The purpose of this solicitation is to contract for water treatment services that will remotely monitored and chemically treat chiller sites in the Metrorail system.

BACKGROUND

The Washington Metropolitan Area Transit Authority (WMATA) conditions the air in underground Metrorail stations to provide a level of comfort for riders during the summer. Water-cooled chiller plants serve underground stations with open towers through which the cooling system releases or exchanges heat from stations.

WMATA has successfully tested chiller water treatment at several chillers in the system to improve operations. Chiller water treatment requires controls and chemical injection equipment capable of delivering real-time monitoring and response. Such a system uses remote dosage injection to ascertain and correct chiller system water composition irregularities. Chemical treatment limits corrosion of Metro's chiller piping systems, reduces scaling, controls microbiological bacteria, reduces water consumption, and improves overall chiller performance.

Station chillers are in use from May-October of the calendar year to lower the temperature in Metrorail underground stations. Water is used to transfer heat in the chiller system thus heat-transfer surfaces must be kept free from water contaminants for the safety and efficiency of chiller operation. Chiller water must be continuously monitored and treated to control and prevent operational maintenance concerns such as:

- Scale formation and fouling;
- Corrosion and piping system leaks; and
- Growth of harmful microbes such as Legionella bacteria.

SCOPE OF WORK

WMATA is seeking a contractor to install and maintain remotely monitored chemical injection and dousing equipment, control and communication devices, and to tie them into chiller plant open cooling loops. This Scope of Work includes regular reporting of operational status and annual service for thirty (35) water treatment systems listed on the price schedule.

The contract is for a base period of one (1) year with three (3) one (1) year option periods. Each yearly period shall consist of two (2) periods, active and inactive. The active period (May 1– October 31) shall be the period of performance that the installed equipment shall be functioning and the contractor shall provide monitoring and treatment services.

The inactive period (November 1– April 30) shall be the period in which the installed equipment shall be idle and the contractor shall **not** be providing monitoring and treatment services. The Contractor shall provide maintenance of it's' equipment throughout the entire period of performance at no cost to the Authority.

- WMATA requires a total of thirty-five (35) water treatment systems with two (2) units required at Metro Center, Clarendon, Navy Yard, Tenleytown/AU and U Street/Cardoza.
- The Contractor shall install and maintain solid chemical water treatment injection systems at all chiller plant locations including pumps and related piping.
- All chemical feed piping installed by the Contractor shall be schedule 80 PVC pipe and fittings. All piping shall be supported at a minimum every six feet (6').
- Used, discontinued and/or demonstration water treatment systems shall not be accepted.
- Monthly charges shall be prorated for any period of time in which the chillers are offline for two (2) weeks or more.
- Equipment shall remain the property and be maintained by the Contractor during the term of this contract to include active, inactive periods or option years at no cost to the Authority. WMATA shall be provided with any upgrades, modifications, or enhancements to the installed water treatment systems or management systems at no cost.
- Upon expiration of the contract, the Contractor shall be instructed by WMATA to remove their equipment at no cost to the Authority.
- WMATA shall provide escorts for any services performed on the Authority's property.
- All equipment failures or installation malfunctions work performed by the Contractor shall be responded to within 24 hours and corrected to WMATA's satisfaction within three (3) business days.
- The Contractor shall provide the design and engineering of water treatment systems, all hardware, and software – including programming and licenses, communication devices, and related cellular service.
- The Contractor shall provide automated controllers – typically (1) per cooling system which shall provide real-time monitoring through a chemical trace analysis methodology and immediately adjust the dosing of chemical(s) in response to the analysis.
- Utilizing stable trace chemical methodology, treatment of the open cooling loop shall read the loop water at a minimum of every 60 seconds and adjust it by dosing applicable agents in real time to meet water quality parameters including scale, corrosion and microbe prevention.
- The system shall include alarms and equipment malfunction notifications sent by remote communication to the Contractor and WMATA by choice of text messages, via internet, or through Building Automation System (BAS)/Supervisory Control and Data Acquisition (SCADA) as selected by WMATA.
- The Contractor's directly trained personnel shall monitor and respond to alarms from May through October for the entire period of performance of this contract (including option periods), 24 hours per day/7 days per week.
- The Contractor shall provide the necessary solid chemicals required by each water treatment system for the entire cooling season (May-October annually) and any subsequent additional option periods (if exercised). Water treatment services shall include providing equipment, chemical costs and regular routine service - no less than once per month.

- The Contractor shall be responsible for ensuring compliance with all federal, state and local environmental laws and regulations which may vary from location to location when providing water treatment services on Metro property.
- The Contractor will comply with the requirements of the WMATA Safety Data Sheet (SDS) Approval Package to ensure safe use of water treatment chemicals. The Contractor must submit Safety Data Sheets (SDS's) for all chemical products for WMATA's review and approval prior to use.
- The Contractor shall perform all chemical transfers by company employees fully trained and dedicated to chemical delivery excellence. All chemical holding tanks supplied by the Contractor shall have a means of secondary containment. The Contractor shall comply with all applicable WMATA spill and pollution prevention requirements as defined by WMATA federal, state and local authorities depending on where the chillers are located.
- Chemical storage shall be limited only to quantities anticipated for use during a normal monthly cycle.
- All deliveries of chemicals to WMATA sites shall be scheduled three (3) business days prior to delivery with WMATA's Contracting Officers Technical Representative (COTR). No unscheduled deliveries of chemicals shall be made to sites without WMATA chiller maintenance personnel present to receive them.
- The Contractor shall provide wireless connectivity from each water treatment system to Contractor's off-site online monitoring station and provide weekly performance-based report feedback to WMATA during the cooling season May 1 to October 31 annually.
- Communication controller shall have the ability to communicate wirelessly to the web where system data is housed in a dedicated portal.
- Remote off-site monitoring shall be manned with Contractor's own staff and remain operational 24 hours per day/7 days per week. The use of third party call centers to support system monitoring are **not** acceptable.
- The Contractor shall provide on-site service at a frequency of no less than once per month to maintain the water treatment system at specified locations in accordance with SOW during each annual cooling season.
- The Contractor shall provide the highest level of customer service in the proper administration, monitoring, control and diagnostics of chemicals administered.
- The Contractor shall provide initial training in the base year period of performance of the contract and subsequent annual training in option year periods one (1) through three (3) to include two (2) half day training sessions with an estimated ten (10) to fifteen (15) WMATA personnel in each session.
- The Contractor's in-house training program shall be available for review by WMATA on a routine basis.
- The Contractor shall submit pertinent employee's resumes upon WMATA's demand who will work on installation and monitoring of Metro's water treatment systems and ensure there is adequate emergency coverage.
- The Contractor shall monitor and feed the water treatment systems with chemicals to optimize ongoing maintenance of chiller assets. WMATA requires that all chillers are monitored and fed with chemicals at optimal levels based on actual chiller system performance. The water treatment technology shall have the capability of reacting to performance based water quality parameters as much as possible with existing technology.

- The Contractor shall provide the following: (1) Corrosion Rate Monitoring - Direct real-time corrosion rate monitoring for mild steel and copper in the open condenser water systems; and (2) Microbiological Control. The system shall utilize monitoring and control technology to detect the growth rate of bacteria in open loop systems adjustments to biocide feed rates should be made on site at time of site visit. With the location of the cooling towers in the heavily populated areas of the city, it is of great concern that bacteria levels are controlled automatically. Changing plant conditions can occur without notice, which can cause microbiological upsets.
- WMATA shall provide electrical service (120v) to within approximately three (3) feet of proposed water treatment controller location.
- WMATA shall work with the Contractor to identify the most effective locations for "taps" in existing cooling line loops for chemical treatment and will install the "taps" at the agreed upon locations. This evaluation aims to maximize the effectiveness of chemical injections without any preference for a circulation pump series, arrangement or an activation (lead-lag) system.
- Contractor shall use schedule 80 PVC pipe and fittings. The piping shall be supported at a minimum of every six (6) feet for all chemical feed piping.
- The Contractor shall provide on-line training programs for WMATA personnel or provide power point presentation documenting the chosen delivery method of chemicals to the chiller plant.
- The training program shall include two (2) half-day training sessions with an estimated ten (10) to fifteen (15) WMATA personnel in each session for the base period of performance and each option period.

DELIVERABLES

The following is a list of the deliverables for this requirement. Contractor shall submit all deliverables to the COTR in accordance with the table below and in compliance with this SOW. The COTR shall review the deliverables within five (5) calendar days.

DELIVERABLES	DATES REQUIRED
Project Work Schedule	After Notice of Award
System Drawings and Related Plans	Within 7 days after Notice to Proceed
Project Status Report versus Project Schedule	Weekly
Operation and Maintenance Manual	Prior to substantial completion
Final Operation and Maintenance Manual	At Completion of the system installation
Completion of system install (all sites)	Fifteen (15) week after Notice to Proceed

QUALIFICATIONS

- The Contractor shall demonstrate experience in the installation and maintenance of similar water treatment systems as described in the Scope of Work on a scope and scale comparable to WMATA's requirements utilizing trace methodology.
- The Contractor shall have training programs in place in the base period of performance and option periods, if exercised for new hire personnel as well as a continuous training program for WMATA employees to ensure applicable WMATA staff are trained appropriately on water treatment system operations and monitoring technology.
- The Contractor shall provide WMATA with a primary Project Manager as well as an alternate Project Manager who possess experience in water treatment maintenance for similar chillers as described in the Scope of Work.

PERFORMANCE AND ACCEPTANCE CRITERIA

- Upon completion of 80% of each site, the Contractor shall request a pre-substantial completion inspection (SCI) by a WMATA appointed inspector. A punch list will be developed from this inspection to be completed by the Contractor prior to final SCI and close out of system installation at each site.
- The Water Treatment System shall be considered acceptable when WMATA certifies that all Deliverables have been received, approved, and accepted and all water treatment systems are fully operational. WMATA may perform regular inspections of work to confirm status as defined by the Contractor's project schedule.
- WMATA reserves the right to perform impromptu inspections and observations during the course of the work.

TECHNICAL SPECIFICATIONS

The Contractors water treatment services must provide a dosing and control system which incorporates all of the following:

- Automatic biocide dosing (monitoring and response for oxidizing biocides like bromine).
- Automatic bleed-off control system (preferably conductivity controlled).
- Automatic inhibitor dosing to achieve maximum water cycles (preferably water meter controlled based on the volume of make-up water).
- Comprehensive record keeping to document system requirements are achieved.
- Formal, routine legionella risk assessment and control.
- Identification of cooling tower loop tap locations to permit optimum chemical injection into the system so as to provide most efficient use of chemical injection.
- Monitoring to provide recommendations for operational improvements and have the ability to take immediate action on critical alarms and real-time remote chemistry adjustments via chemical pumps when predefined parameters are out of range.
- Quality control measures and monitor to ensure system operations.
- Real-time 24/7 monitoring to ensure constant monitoring of cooling system water treatment.
- Responsible and reliable management of the system.
- Support for commercial chillers ranging from 200-400 tons.

LEGIONELLA TESTING

The Contractor shall provide testing for Legionnaires' disease bacteria (LDB) from samples obtained by WMATA staff at each chiller cooling tower. WMATA staff will sample each location twice during the cooling season and deliver samples to the Contractor for testing.

The Contractor shall provide a LDB testing report (to be approved by WMATA) with data/analysis regarding the presence of legionella bacteria. Results should be electronically provided to WMATA from an individual testing sample within 14 business days from receipt of such results.

OPTION

Should additional legionella tests (greater than bi-annual) be required during the course of the contract to include option periods, WMATA will issue a change order and notify the contactor in writing of the amount of additional testing and the proposed schedule required. Pricing for any additional legionella testing greater than bi-annual testing shall be the same unit price as noted on the price sheet for the base year and each option period.

PERFORMANCE SCHEDULES

- All installation work by Contractors shall be completed no later than fifteen (15) weeks from Notice to Proceed. Access to space shall be provided during the hours of 7:00 A.M - 2:00 P.M, Monday through Friday for installation and ongoing maintenance. Access before or after the specified hours must be requested by the Contractor at a minimum of three (3) business days prior to the required approval of access. The Contractor is required to be aware that station facilities are constantly in use and in an occupied and functional state. As such, all work shall be performed as secondary to the ongoing WMATA operations. Contractor shall furnish sufficient technical, supervisory and administrative personnel at all times to ensure production of the work in accordance with the delivery schedule.
- Quality Control - Professional level skills and management practices are required on the performance of this contract.
- Contractor shall appoint a single point-of-contact and liaison between the Contractor and WMATA for all work under the contract. The contact shall coordinate all work under this contract, provide quality controls, review procedures, eliminate conflicts, errors/omissions in submittals and ensure the technical accuracy in all designs, drawings, specifications and installation and operation of equipment.
- Contractor shall comply with all applicable codes and regulations as defined by WMATA and Federal, State and Local authorities depending on where the chillers are located.

Listing of Chiller Plant Locations

Line Item No:	Location of Chiller Plant	Address	Chiller Tonnage (each unit)	Quantity of chillers at site
1	Anacostia	1800 Anacostia Drive, SE, Washington, DC 2002	300	1
2	Ballston-MU	3930 Fairfax Drive, Arlington, VA 22203	350	2
3	Benning Road	4500 Benning Rd NE, Washington, DC 20019	350	1
4	Bethesda	7450 Wisconsin Ave, Bethesda, MD 20814	350	2
5	Capitol Heights	5500 Davey Street, Capitol Heights, Maryland	350	1
6	Clarendon (2)	2750 Clarendon Blvd, Arlington, VA 22201	350	2
7	Columbia Heights	3030 14th St NW, Washington, DC 20009	350	1
8	Congress Heights	13th Street & Alabama Avenue, SE Washington, DC	300	1
9	Crystal City	1750 South Clark St., Arlington, VA 22240	350	1
10	Farragut North	1116 Connecticut Ave NW, Washington, DC 20036	350	2
11	Farragut West	900 18th Street, NW Washington, DC	350	3
12	Federal Center SW	400 2nd St SW, Washington, DC 20515	350	2
13	Forest Glen	9730 Georgia Ave, Silver Spring, MD 20910	300	1
14	Georgia Avenue-Petworth	3670 New Hampshire Ave NW, Washington, DC 20010	350	1
15	Glenmont	12501 Georgia Ave, Silver Spring, MD 20906	300	1
16	L'Enfant Plaza	7th & D SW Washington, DC (on General Services Administration Building)	600	2
17	Medical Center	8810 Rockville Pike, Bethesda, MD 20892	350	1
18	Metro Center (2)	775 12th Street, NW Washington, DC	350	4
19	Mt Vernon Sq 7th St-Convention Center	700 M St NW, Washington, DC 20001	350	2

Listing of Chiller Plant Locations
(Continuation Sheet)

Line Item No:	Location of Chiller Plant	Address	Chiller Tonnage (each unit)	Quantity of chillers at site
20	Navy Yard (2)	1101 Half Street, SE Washington, DC	200	2
21	Pentagon City	601 Army-Navy Drive, Arlington, VA	350	2
22	Potomac Ave	529 13th Street, SE Washington, DC	350	2
23	Rosslyn	1850 N Moore St, Arlington, VA	350	1
24	Stadium Armory	19th & C Streets, SW Washington, DC	350	1
25	Tenleytown AU (2)	4202 Ellicott St, NE, Washington, DC	350	2
26	U Street/Cardoza (2)	1220R U Street, NW Washington, DC	300	2
27	Union Station	645 First St, NE, Washington, DC 20002	350	1
28	Van Ness UDC	4200F Connecticut Ave, Silver Spring, MD 20902	350	1
29	Wheaton	11171 Georgia Ave Silver Spring, MD 20902	350	1
30	Woodley Park	3103 Connecticut Avenue, NW Washington, DC	350	2