NOTICE OF AWARD OF CONTRACT

TO: BOLAND TRANE SERVICES, INC.
30 W WATKINS MILL ROAD
GAITHERSBURG, MD 20878

DATE ISSUED: FEBRUARY 12, 2014
CURRENT CONTRACT NO: 538-14LW
CONTRACT TITLE: HVAC PREVENTIVE MAINT. & REPAIR - SOUTH OF RT. 50
PRIOR CONTRACT NO: N/A

THIS IS A NOTICE OF AWARD OF CONTRACT AND NOT AN ORDER. NO WORK IS AUTHORIZED UNTIL THE VENDOR RECEIVES A VALID COUNTY PURCHASE ORDER ENCUMBERING CONTRACT FUNDS.

Your firm is awarded the above referenced contract in accordance with the response submitted by you on November 19, 2013. The contract term covered by this Notice of Award is effective MARCH 1, 2014 and expires on OCTOBER 31, 2018.

The contract documents consist of the terms, conditions, and specifications of Invitation to Bid No. 538-14 and the bid of the Contractor, incorporated herein by reference.

CONTRACT PRICING:
1) REFER TO CONTRACTOR’S BID FORM
2) PRICING FIRM THROUGH OCTOBER 31, 2015. POSSIBLE PRICE ADJUSTMENTS THEREAFTER BASED ON CPI-U FOR THE MONTH OF JUNE.

ATTACHMENTS:
BID FORM
SPECIFICATIONS EXCERPT

EMPLOYEES NOT TO BENEFIT:
NO COUNTY EMPLOYEE SHALL RECEIVE ANY SHARE OR BENEFIT OF THIS CONTRACT NOT AVAILABLE TO THE GENERAL PUBLIC.

VENDOR CONTACT: PATRICK PAYNE
EMAIL: PAT.PAYNE@BOLAND.COM

EMAIL: JFAYAD@ARLINGTONVA.US
TELEPHONE NO.: 703-228-4829

TELEPHONE NO.: 240-306-3226

COUNTY CONTACT: JACOB FAYAD

CONTRACT AUTHORIZATION DISTRIBUTION

Krystyna Hepler, CFPB  VENDOR: 1
Procurement Officer

Date  BID FOLDER: 2
2/12/2014
ARLINGTON COUNTY, VIRGINIA  
OFFICE OF THE PURCHASING AGENT  
INVITATION TO BID NO. 538-14  

BID FORM REVISED 11-14-2013  

SUBMIT TWO (2) FULLY-COMPLETE AND SIGNED BID FORMS TO THE OFFICE OF THE BID CLERK, SUITE 511, 2100 CLARENDON BLVD., ARLINGTON, VIRGINIA, 22201 (ONE FORM SHALL CONTAIN AN ORIGINAL LONGHAND SIGNATURE; THE OTHER SHALL BE A PHOTOCOPY OF THE SIGNED ORIGINAL)  

BIDS WILL BE OPENED AT 3:00 P.M., ON NOVEMBER 19, 2013  

FOR PROVIDING PREVENTIVE MAINTENANCE AND REPAIR, AND ON-CALL REPAIR SERVICES FOR HVAC EQUIPMENT AND BOILERS IN VARIOUS COUNTY BUILDINGS PER THE TERMS, CONDITIONS AND SPECIFICATIONS OF THIS SOLICITATION:  

The undersigned understands and acknowledges the following:  

The official, true, and complete copy of the solicitation documents, WHICH SHALL INCLUDE ALL AMENDMENTS THERETO, is the electronic copy of the solicitation documents provided at the County Purchasing Agent’s website (http://www.arlingtonva.us/purchasing).  

Each bidder is responsible for determining the accuracy and completeness of ALL solicitation documents they receive, including documents obtained from the County, and documents obtained from all other sources.  

1. MONTHLY COST OF PREVENTIVE MAINTENANCE (MECHANICAL):  

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MONTHLY PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlington Rapid Transportation (ART House)</td>
<td>$270.00</td>
</tr>
<tr>
<td>Arlington Mill Community Center</td>
<td>$4,309.00</td>
</tr>
<tr>
<td>Aurora Hills Center</td>
<td>$3,166.00</td>
</tr>
<tr>
<td>Barcroft Sports Complex</td>
<td>$491.00</td>
</tr>
<tr>
<td>Carlyln Center</td>
<td>$402.00</td>
</tr>
<tr>
<td>Community Residences</td>
<td>$410.00</td>
</tr>
<tr>
<td>Department of Parks &amp; Recreation (DPR)</td>
<td>$1,991.00</td>
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<tr>
<td>DFW Garage Bay</td>
<td>$555.00</td>
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<tr>
<td>Equipment Division</td>
<td>$1,981.00</td>
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<tr>
<td>Fairlington Community Center</td>
<td>$2,101.00</td>
</tr>
<tr>
<td>Penwick Center</td>
<td>$1,132.00</td>
</tr>
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BIDDER NAME: Boland Trane Services, Inc.
REVISED BID FORM, PAGE 2 OF 7

<table>
<thead>
<tr>
<th>Location</th>
<th>Monthly Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Station #1</td>
<td>$1,518.00</td>
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<tr>
<td>Fire Station #5</td>
<td>$1,030.00</td>
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<tr>
<td>Fire Station #7</td>
<td>$280.00</td>
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<tr>
<td>Fire Station #9</td>
<td>$538.00</td>
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<tr>
<td>Fire Training Center</td>
<td>$1,012.00</td>
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<tr>
<td>Glen Carlyn Library</td>
<td>$286.00</td>
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<tr>
<td>Gunston Bubble</td>
<td>$276.00</td>
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<tr>
<td>Impound Lot</td>
<td>$766.00</td>
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<tr>
<td>Long Branch Nature Center</td>
<td>$477.00</td>
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<tr>
<td>Motorola Building</td>
<td>$270.00</td>
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<tr>
<td>New Traffic Engineering Warehouse</td>
<td>$157.00</td>
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<tr>
<td>Residential Program Center</td>
<td>$2,015.00</td>
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<tr>
<td>Shirlington Station</td>
<td>$279.00</td>
</tr>
<tr>
<td>Shirlington Library/Signature Theatre</td>
<td>$1,360.00</td>
</tr>
<tr>
<td>Solid Waste/Traffic Division</td>
<td>$1,038.00</td>
</tr>
<tr>
<td>Vehicle Wash</td>
<td>$518.00</td>
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<tr>
<td>Walter Reed Community Center</td>
<td>$1,927.00</td>
</tr>
<tr>
<td>Water/Sewer/Streets</td>
<td>$1,464.00</td>
</tr>
<tr>
<td>WETA Building</td>
<td>$288.00</td>
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</tbody>
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MONTHLY PREVENTIVE MAINTENANCE TOTAL (MECHANICAL): $31,267.00

2. MONTHLY COST OF PREVENTIVE MAINTENANCE (WATER TREATMENT):

<table>
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<th>Location</th>
<th>Monthly Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlington Mill Community Center</td>
<td>$436.00</td>
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<tr>
<td>Aurora Hills Center</td>
<td>$303.00</td>
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<tr>
<td>Carlyn Hall</td>
<td>$37.00</td>
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</table>

BIDDER NAME: Boland Trane Services, Inc.

REVISED BID FORM, PAGE 3 OF 7
Community Residence $37.00
Department of Parks & Recreation (DPR) $239.90
Fairlington Community Center $54.00
Fire Station #5 $55.00
Residential Program Center $79.00
Shirlington Library/Signature Theatre $312.00
Solid Waste/Traffic Division $226.00
Walter Reed Community Center $67.00
Water/Sewer/Streets $37.00
WETA Building $48.00

MONTHLY PREVENTIVE MAINTENANCE TOTAL (WATER TREATMENT): $1,930.00

3. FULLY BURDENED HOURLY LABOR RATES FOR ON-CALL MAINTENANCE AND REPAIR OF HVAC EQUIPMENT

THE ON-CALL HOURLY RATES BID INCLUDE THE PROVISION OF ALL THINGS NECESSARY FOR PERFORMING ON-CALL REPAIRS, INCLUDING BUT NOT LIMITED TO, LABOR, TOOLS, TRANSPORTATION TO, FROM AND BETWEEN JOBS, PARKING, TOOLS-OF-THE-TRADE AND CONSUMABLE SUPPLIES.

<table>
<thead>
<tr>
<th></th>
<th>REGULAR TIME</th>
<th>OVERTIME</th>
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<tr>
<td>PROJECT MANAGER</td>
<td>$125.00/HR</td>
<td>$187.50/HR</td>
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<tr>
<td>HVAC MECHANIC-JOURNEYMAN</td>
<td>$145.00/HR</td>
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<tr>
<td>HELPER/ASSISTANT</td>
<td>$125.00/HR</td>
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<td>WATER TREATMENT TECHNICIAN</td>
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<td>$202.50/HR</td>
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<tr>
<td>TECHNICIAN HELPER</td>
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<td>$N/A/HR</td>
</tr>
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</table>

4. THE DOCUMENTATION REQUIRED IN PARAGRAPH 28. BEST VALUE BID SUBMISSION REQUIREMENTS OF SECTION I. INSTRUCTIONS FOR BIDDERS OF THIS SOLICITATION. FAILURE TO PROVIDE ALL THE INFORMATION REQUIRED WILL RESULT IN REJECTION OF THE BID.

BIDDER NAME: Roland Trane Services, Inc.
TRADE SECRETS OR PROPRIETARY INFORMATION:
Trade secrets or proprietary information submitted by a bidder in connection with a procurement transaction shall not be subject to public disclosure under the Virginia Freedom of Information Act. However, Section 4-111 of the Arlington County Purchasing Resolution states that the bidder must invoke the protection of this section prior to or upon submission of the data or other materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary.

Please mark one:

( ) No, the bid I have submitted does not contain any trade secrets and/or proprietary information.

( X ) Yes, the bid I have submitted does contain trade secrets and/or proprietary information.

If Yes, you must clearly identify below the exact data or other materials to be protected and list all applicable page numbers of the bid containing such data or materials:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

State the specific reason(s) why protection is necessary:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

If you fail to identify the data or other materials to be protected and state the reasons why protection is necessary in the space provided above, you will not have invoked the protection of Section 4-111 of the Purchasing Resolution. Accordingly, effective upon the award of contract, the bid will be open for public inspection consistent with applicable law.

CERTIFICATION OF NON-COLLUSION: The undersigned certifies that this bid is not the result of, or affected by, any act of collusion with another person (as defined in the Code of Virginia § 59.1-68.6 et seq.), engaged in the same line of business or commerce; or any act of fraud punishable under the Virginia Governmental Frauds Act (Code of Virginia § 18.2-498.1 et seq.).

BIDDER NAME: Boland Trane Services, Inc.
BID FORM, PAGE 5 OF 7

CONTACT PERSON AND MAILING ADDRESS FOR DELIVERY OF NOTICES
Provide the name and address of the person designated by the Bidder to receive notices and other communications (Refer to section headed Notices in the Contract Terms and Conditions of this solicitation for further details):

Patrick Payne
30 W. Watkins Mill Road
Gaithersburg, MD 20878

THE PROPER LEGAL NAME OF THE FIRM OR ENTITY SUBMITTING THIS BID MUST BE WRITTEN IN THE SPACE PROVIDED BELOW. THIS BID FORM, AND ALL OTHER DOCUMENTS REQUIRED BY THE INVITATION TO BID TO BE SUBMITTED WITH THIS BID FORM, INCLUDING, BUT NOT LIMITED TO ALL ISSUED AMENDMENTS, MUST BE FULLY AND ACCURATELY COMPLETED AND SIGNED BELOW BY A PERSON AUTHORIZED TO LEGALLY BIND THE BIDDER, OR THE BID MAY BE REJECTED:

AUTHORIZED SIGNATURE

PRINT NAME AND TITLE  John M. Cain, Sales Manager

INDICATE THE NAME AND CONTACT INFORMATION OF THE PERSON WHO CAN RESPOND AUTHORITATIVELY TO ANY QUESTIONS REGARDING THIS BID (I.E. PROJECT MANAGER):

NAME (PRINTED): Patrick Payne TITLE: Account Executive
E-MAIL ADDRESS: pat.payne@boland.com TEL. NO.: (240) 306-3226

SUBMITTED BY: (LEGAL NAME OF ENTITY) Boland Trane Services, Inc.

ADDRESS: 30 W. Watkins Mill Road
CITY/STATE/ZIP: Gaithersburg, MD 20878
TELEPHONE NO: (240) 306-3000 FACSIMILE NO: (240) 306-3400

VA. CONTRACTOR LICENSE #: 2701017861

THIS FIRM IS A:  ⬜ CORPORATION, ⬜ GENERAL PARTNERSHIP, ⬜ LIMITED PARTNERSHIP, ⬜ UNINCORPORATED ASSOCIATION, ⬜ LIMITED LIABILITY COMPANY, ⬜ SOLE PROPRIETORSHIP

IS FIRM AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VA? Y ☑

IDENTIFICATION NO. ISSUED TO THE FIRM BY THE SCC: P0171191

ANY BIDDER EXEMPT FROM SCC AUTHORIZATION REQUIREMENT SHALL INCLUDE A STATEMENT WITH ITS BID WHY THEY ARE NOT REQUIRED TO BE SO AUTHORIZED

IS YOUR FIRM OR ANY OF ITS PRINCIPALS CURRENTLY DEBARRED FROM SUBMITTING BIDS TO ARLINGTON COUNTY, VIRGINIA, OR ANY OTHER STATE OR POLITICAL SUBDIVISION? NO

BIDDER STATUS: ⬜ MINORITY OWNED: ⬜ WOMAN OWNED: ⬜ NEITHER: X
Metropolitan Washington Council of Governments (COG)
Rider Clause

PERTAINING TO THE USE OF CONTRACT(S) BY MEMBERS OF THE METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS PURCHASING OFFICERS’ COMMITTEE

A. If authorized by the bidder(s), resultant contract(s) will be extended to any or all of the listed members as designated by the bidder to purchase at contract prices in accordance with contract terms.

B. Any member utilizing such contract(s) will place its own order(s) directly with the successful contractor. There shall be no obligation on the part of any participating member to utilize the contract(s).

C. A negative reply will not adversely affect consideration of a bidder’s bid/proposal.

D. It is the awarded vendor’s responsibility to notify the members shown below of the availability of the Contract(s).

E. Each participating jurisdiction has the option of executing a separate contract with the awardee. Contracts entered into with a participating jurisdiction may contain general terms and conditions unique to that jurisdiction including, by way of illustration and not limitation, clauses covering minority participation, non-discrimination, indemnification, naming the jurisdiction as an additional insured under any required Comprehensive General Liability policies, and venue. If, when preparing such a contract, the general terms and conditions of a jurisdiction are unacceptable to the awardee, the awardee may withdraw its extension of the award to that jurisdiction.

F. The issuing jurisdiction shall not be held liable for any costs or damages incurred by another jurisdiction as a result of any award extended to that jurisdiction by the awardee.

Continued on next page
**BIDDER'S AUTHORIZATION TO EXTEND CONTRACT:**

<table>
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<tr>
<th>YES/NO</th>
<th>JURISDICTION</th>
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<td>X</td>
<td>Alexandria Public Schools</td>
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<tr>
<td>X</td>
<td>Alexandria Sanitation Authority</td>
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<tr>
<td>X</td>
<td>Arlington County, Virginia</td>
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<tr>
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<td>X</td>
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<td>District of Columbia Water &amp; Sewer Auth.</td>
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<tr>
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<td>City of Manassas Public Schools</td>
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<td>Winchester Public Schools</td>
</tr>
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</table>

**BIDDER'S LEGAL NAME:**

Boland Trane Services, Inc.

**DATE OF BID:** November 7, 2013
BACKGROUND:
The County divided the facilities for which HVAC preventive maintenance and repair services are required into two (2) groups. This solicitation covers the first group - facilities which are located south of Route 50. Two separate contracts will be maintained, one for each group of facilities. Equipment covered by this contract is shown in SCHEDULE A.

SCOPE OF WORK REQUIREMENTS:
For the amounts bid, the Contractor shall furnish all necessary labor, transportation, parking fees, tools, tools-of-the-trade, consumable supplies, and materials as may be required to provide a comprehensive preventive maintenance service (mechanical and water treatment) on all HVAC equipment listed in Schedule A. The equipment listed in Schedule A represents current inventory of the County's HVAC equipment and window air conditioning units in the facilities covered by this solicitation.

The Contractor shall service or replace HVAC equipment and/or window air conditioning units not on Schedule A on a time and materials, on-call basis.

As part of corrective maintenance work, the Contractor shall provide start up and warranty documentation of any new equipment and provide training in the requirements and use of the new equipment to County personnel on an as needed basis.

SUBCONTRACTORS:
All HVAC services under this Contract must be performed by the prime Contractor. No part of the HVAC work can be subcontracted. The Contractor will be allowed to subcontract the water treatment services.

PRICING:
All parts, materials, and work performed by subcontractors shall be provided to the County at the Contractor's cost. The Contractor's original purchase records shall be provided to the County along with the Contractor's invoice to support the costs charged. Labor provided for non-contract work shall be at the contract fully loaded labor rates provided under item 3 of the Bid Form.

PREVENTIVE MAINTENANCE:

GENERAL:
The Contractor shall perform the following Preventive Maintenance work included under Item 1 of the Bid Form. The County reserves the right to cancel all or part of preventative maintenance services under this Contract and obtain such services from another source.

- All adjustments and service required to maintain proper and energy-efficient operation of all systems and equipment listed in Schedule A in accordance with the General Equipment Preventive Maintenance Guidelines in Schedule B.

- All parts, supplies necessary to perform preventive maintenance on equipment covered by this contract provided during the operational period or required by the seasonal shut-down or
start-up of the systems, components and individual equipment. The County will reimburse the Contractor for the cost of refrigerant necessary to complete preventive maintenance work. The Contractor shall keep a record of the amount of all refrigerant additions and/or subtractions in accordance with current Environmental Protection Agency (EPA) standards. In addition, the Contractor shall record the amount of refrigerant added or removed on work tickets and preventative maintenance tickets.

• All call-backs for system malfunctions (no cooling or heating) caused by Contractor’s improper maintenance or failure to provide maintenance in accordance with contract requirements shall be performed by the Contractor at no additional cost to the County within the timeframes as defined in the ON-CALL REPAIR SERVICE paragraph below. If the Contractor fails to timely correct system malfunctions, the County reserves the right to hire another contractor or perform the work in-house. All cost associated with such repairs shall be credited against the Contractor's monthly invoice.

• Coordination with the County’s Building Automated System (BAS) Facilities Maintenance Staff, as specified in the CHECK-IN AT SITE AND SIGN-OFF paragraph below.

PREVENTIVE MAINTENANCE SCHEDULE:
The Contractor shall identify to the County their Contract Manager within five (5) calendar days of the award of contract. Contractor’s Contract Manager within ten (10) calendar days of award of the contract shall develop the proposed time schedule for preventive maintenance for the first month of work in accordance with requirements of Schedule B and submit it for review and approval to the County Project Officer at no additional cost to the County. The time schedule is subject to adjustment upon request from the County Project Officer.

The Contractor shall submit to the County Project Officer the proposed time schedule for preventive maintenance for each following month of the Contract before the 10th of the preceding month.

The initial service to any equipment shall be the annual service or next highest cyclical service (e.g. semi-annual, quarterly) and shall meet the guidelines identified in Schedule B. Upon completion of the initial service of all equipment listed in Schedule A and within one hundred twenty (120) calendar days of the County’s approval of the schedule, the Contractor shall submit to the County’s Project Officer, three (3) bounded hardcopies and one (1) electronic PDF copy on DVD of a written report identifying the building name, building address, the date of service visit and the following information for all equipment listed in Schedule A:

1. Equipment type, location, model number, serial number, and manufacturer (the Contractor shall verify the equipment listed in Schedule A for accuracy);

2. List of HVAC equipment not included on Schedule A. Include equipment type, location, model number, serial number, and manufacturer;
3. A statement as to the current condition of each piece of equipment;

4. A description of work performed as a part of the annual preventive maintenance visit;

5. Specific recommendations for any repair or modification which the Contractor believes could enhance the operation of the equipment; and

6. An estimate of the cost of each task to accomplish the work recommended in item 4 above using the Contract labor rates.

7. A statement as to the current condition of the water treatment and any recommendations.

A written report meeting the criteria above shall be provided yearly after each annual service and within sixty (60) days after the contract anniversary date.

All major deficiencies found during any service visit shall be relayed by phone or in person to the County Project Officer or designee on the same day of the service visit.

All inspection, testing, and preventative maintenance of all HVAC and water treatment equipment identified in Schedule B shall be performed by technicians that meet the criteria identified in the CONTRACTOR’S PERSONNEL paragraph below.

Throughout the Contract Term, the Contractor shall provide to the County Project Officer and the building supervisor reports addressing any work that is not covered under the Preventive Maintenance work that is in need of attention and that may include but is not limited to such equipment as outlined in Schedule A. Each report shall include, at a minimum, building name and location, equipment where deficiencies have been determined, description of deficiency and the date deficiency was discovered. Such reports shall be submitted immediately upon discovery of any deficiency in the County equipment.

PREVENTIVE MAINTENANCE DOCUMENTATION:
An appropriate Preventive Maintenance clear plastic folder shall be posted at or near each separate piece of equipment. Roof top equipment (exhaust fans, etc.) shall have their folders posted in the closest mechanical room or at the exhaust fan starters. These folders shall be posted within sixty (60) days of the Initial Service.

The Preventive Maintenance folders shall contain Work Tickets with the following information:

(1) Date scheduled preventive maintenance was last performed and by whom.

(2) "REMARKS" column shall identify all maintenance that was performed satisfactorily.

(3) Recorded readings of items as required by Schedule B.
(4) If anything other than "satisfactory" is entered in the REMARKS column, the Contractor's mechanic shall indicate on the work ticket any uncorrected deficiencies; reasons for deferring corrective services; critical readings taken (pressure, temperature etc.) and any other information needed to properly evaluate the condition or operational status of the equipment.

(5) Failure by contractor's staff to provide maintenance of each piece of equipment in accordance with Schedule B and the manufacturer's standard of care will result in the amount charged for the preventive maintenance of such equipment being deducted from the monthly bill for each month such failure exists, in accordance with price breakdown for the entire building provided by the Contractor and accepted by the County Project Officer. Billing will be verified by the County Project Officer prior to processing for compliance.

PREVENTIVE MAINTENANCE SERVICE (MECHANICAL):
The Contractor shall meet with the County within one week of the award for a kick-off meeting prior to starting any work under the Contract.

The Contractor shall begin Preventive Maintenance service on HVAC equipment upon receipt of a valid County Purchase Order and the issuance of the monthly County Work Orders. Contractor shall only complete and invoice the work for which both the Purchase Order and the Work Order have been issued.

PREVENTIVE MAINTENANCE SERVICE (WATER TREATMENT):
The cleaning and treatment of circulating HVAC water systems provided by the Contractor shall include the following, in accordance with requirements specified in the Scope of Work and Schedule B for this solicitation:

1. Provision of cleaning compounds.
2. Chemical treatment for closed loop heat transfer systems.
3. Chemical treatment for open loop systems.
4. Treatment of glycol-water heat transfer systems.

SEASONAL WORK:
The Contractor shall provide two (2) seasonal start-ups and pump-downs or shut-downs of the HVAC equipment in accordance with requirements of Schedule B, at no additional cost to the County. The dates of seasonal changeovers are April 15 (from heating to cooling) and October 15 (from cooling to heating) of each contract year. Those dates may be adjusted upon County’s request. The Contractor shall provide to the County a seasonal change over matrix for each change over (heating and cooling) no later than forty five (45) days before each changeover date. If the Contractor fails to perform the seasonal changeovers in accordance with the requirements specified in Schedule B, the Contractor shall correct any problem resulting from such failure at no cost to the County. If the Contractor fails to correct such problems, the County reserves the rights to call a different contractor to perform the required services at the Contractor's cost.
The seasonal change over matrix shall include buildings, equipment, systems, county date of inspection, service completed date, oil analysis recovery, comments and others.

PAYMENT FOR PREVENTIVE MAINTENANCE SERVICES:
Payments for work performed by the Contractor and accepted by the County Project Officer, will be made by the County to the Contractor on a monthly basis, upon completion of service and submission by the Contractor of a proper and correct invoice with all associated Work Tickets and receipts attached.

The Contractor shall submit to the County a monthly invoice, in duplicate, along with Work Tickets for each site visit. The Contractor's invoice shall reflect the total amount of billing, supported by the appropriate Work Tickets, clearly itemized and identified by each site. Monthly payment will only be made for those sites supported by Work Ticket(s). All work tickets must include the County's Work Order Number.

In the event this contract becomes effective or is terminated during the course of a month, the amount to be paid to the Contractor for that month shall be determined by prorating the amount specified in the contract for a full month based on the number of calendar days under contract.

Payments for all labor performed on a time and materials basis shall be for work performed and services rendered on the job site only. No "portal to portal" charges are permitted under this contract.

CONTRACT CHANGES:
The service contract value of listed equipment discontinued from service during the Contract Term shall be deducted from the contract price. The contract price for that building shall be reduced in proportion to the value of service for the deleted portion of the service. In like manner, new equipment shall be added to the building's monthly contract price after a written amendment to the Contract has been executed by the County, if the County, in its sole determination, desires to include such equipment in this Contract. The value of any such additions or subtractions shall be determined through negotiation between the County and the Contractor.

CORRECTIVE WORK AND ON-CALL REPAIRS:

CORRECTIVE WORK:
For time and material work less than $5,000, the County will issue Work Orders to the Contractor. All time and material work shall require associated Work Tickets indicating the issued Work Order number. The Contractor's employees shall validate their time and material work through sign-off on the Work Ticket by the County Project Officer or designee in accordance with the CHECK-IN AT SITE AND SIGN-OFF paragraph below. The sign-off on the Work Ticket shall be considered evidence of the site visit only and shall not be construed as the County's acceptance of any work performed during the visit or the amount of labor hours charged to the job.
The Contractor shall submit a proposal for all inspection, testing, maintenance, repair, replacement, and installation services whose cost estimates exceed $2,500.

The Contractor shall submit a formal proposal for all inspection, testing, maintenance, repair, replacement, and installation services whose anticipated cost exceed $5,000. The Contractor's proposal shall be based on the Contract Labor Rates on the Bid Form, and for the actual cost for materials used to complete the work. The proposal shall indicate the cost for the work, all the necessary material and the associated labor each as a separate cost item. Upon acceptance of the proposal by the County Project Officer or designee, the County shall issue a separate Purchase Order for the work. The Contractor shall not begin the work without receipt of the Purchase Order. The County reserves the right to solicit additional cost proposals or issue a separate bid(s) for any such project work.

On-call repair service:
In the event of a failure of any equipment included under this Contract, the Contractor shall arrive onsite with all tools and equipment necessary to perform repairs within four (4) hours of receiving a telephone or e-mail notification from the County. If the faulty system provides critical HVAC service (such as in an automated data processing area, a laboratory where ventilation and temperature control is critical, or as clearly identified by the County Project Officer and/or designee), the Contractor shall arrive onsite with all tools and equipment necessary to perform repairs within two (2) hours of receiving a call from the County, identifying such an emergency. (Note: All emergency requests will be specifically identified by the County on work orders, purchase orders, e-mails and/or phone calls). If the Contractor is unable or fails to arrive onsite within the required time frame, the County reserves the right to retain other contractors to perform the service. If the Contractor is unable or fails to arrive onsite following on-call requests within the required time frame on two (2) or more occasions during any one month period, the County may terminate the contract for convenience.

Mechanical Load Calculations:
Load calculations shall be performed for all work associated with HVAC modifications. Loads shall be submitted to County Project Officer for approval prior to procurement of equipment and/or start of work. Refer to Arlington County Infrastructure Design and Construction Standards (included in the solicitation as Exhibit C) for acceptable load calculation software. The County shall provide the Contractor with the updated Arlington County Infrastructure Design and Construction Standards as they become available.

Cost for load calculation will be determined on project by project basis, if required in project scope. Load calculation is not an overhead cost. Price for load calculation must be included as a separate line item in Contractor's proposal.

PAYMENT FOR REPAIR AND ON-CALL SERVICES:
The Contractor shall provide itemized invoices, in duplicate, for all
repair and on-call services for listed and non-listed equipment performed by the Contractor and accepted by the County Project Officer, with associated Work Ticket attached.

A separate invoice shall be submitted for each occurrence (repair); the invoice shall contain at a minimum the following information:

(A) Building name and address where equipment is located.

(B) Date and time of arrival and completion of repair.

(C) Name of County person authorizing the repairs.

(D) Complete description of repair.

(E) Amount of billing showing all parts installed and total hours it took to provide the repairs. Contractor's invoices for parts and signed work orders and sign-off's shall be attached. Parts shall not be shown as a lump sum. The invoice shall include a breakdown of all materials used.

(F) County's Work Order Number.

Payments for all labor performed on a time and materials basis shall be for work performed and services rendered on the job site only. No "portal to portal" charges are permitted under this contract.

ERRORS OR DISCREPANCIES IN EQUIPMENT LIST:
If the Contractor discovers any discrepancies in the equipment list during their site inspections, they shall immediately notify the County Project Officer so that an appropriate amendment may be issued amending, adding, or deleting erroneous entries in the equipment list.

IMPROPER OPERATION:
Costs of repair or maintenance work caused by improper operation, negligence, misuse, or accident caused by the County or otherwise beyond the control of the Contractor, other than normal wear and tear, shall be paid for by the County. The Contractor shall be responsible for all costs of repair or additional maintenance work caused by improper operation, negligence, misuse or accidents caused by the Contractor's employees or as a result of actions of the Contractor, Contractor's employees or subcontractors.

AUTOMATIC TEMPERATURE CONTROLS:
The Contractor shall furnish service, inspection and calibration on automatic temperature controls. In addition, if the County requests the Contractor to correct a problem (including the Direct Digital (DDC) controls), the Contractor shall be responsible for obtaining inspection and service and coordinating the assigned work with the DDC Service Provider (County will provide a list of the approved DDC Service Providers to the Contractor). The Contractor shall submit to the County copies of the original invoices upon request. Any such work performed within preventive maintenance responsibilities shall be included in the monthly preventive maintenance price. For any other projects, this work will be paid on time and materials basis. The County will reimburse the Contractor for the labor and parts charged by the DDC Service Provider at the Contractor's cost.
CONTRACT INCLUSIONS:
The Contractor's monthly service charges and hourly labor rates for repair work shall include provision of all oil and grease; solvents and cleaners; rust remover, paint for touch up of equipment, as needed; screws, as needed, to properly secure panels and covers; adhesives for insulation; rubbertex type insulation; fuses, wire, wire connectors and wire nuts; cleaning solvents, coil cleaners and rags; cleaning of coils, unless otherwise excluded herein, for all operating equipment. The Contractor shall remove all material, waste, refrigerant, and refrigeration oil at no additional cost to the County. It will be the Contractor's responsibility to maintain all mechanical rooms and ensure that they are clean and free of debris and trash. The monthly service also includes water treatment services as specified in the Preventive Maintenance (Water Treatment) section above.

CONTRACT EXCLUSIONS:
Contract service price does not include the expense incurred in removing, replacing or refinishing any part of the building structure necessary to the execution of the contract.

The County reserves the right to issue separate solicitation(s) for any replacements of hermetic or semi-hermetic compressors, and equipment, if necessary, or, at the County's sole discretion, negotiate with the Contractor for such work under the terms and provisions of this Contract.

Throughout the Contract Term, the Contractor shall provide to the County Project Officer on a monthly basis reports covering any work that is outside the scope of this contract that is in need of attention and that may include but not limited to such equipment as outlined above.

WORK HOURS:
Regular work hours are defined as: 7:30 a.m. to 5:00 p.m., Monday through Friday, except County observed holidays. All Preventive Maintenance Services shall be performed during regular working hours. Some County facilities are open at different hours, including some with 24 hour access. It is the Contractor's responsibility to determine the hourly schedule and access availability for each building covered by this contract. No overtime payments will be allowed for preventive maintenance work done before 7:30 am or after 5:00 pm when such scheduling is done at the Contractor's option.

OVERTIME WORK:
Repair work authorized in writing by the County Project Officer to be performed on a time and material basis outside of regular work hours shall be paid at the overtime hourly labor rates included in the Contractor's bid. The Contractor shall not perform overtime work for any reason without the advance knowledge and approval of the County Project Officer. Work performed outside of regular work hours without the advance knowledge and approval of the Project Officer will be paid for at straight-time hourly labor rates only.

CHECK-IN AT SITE AND SIGN-OFF:
The Contractor's employees shall check in and out with the County's Facilities Maintenance hot-line (703-228-4422) to receive a job reference number for each building visit for all emergency or regular (preventive and corrective) maintenance service and projects, which will allow for proper notification to County staff at the various sites of who will be performing work in their building. In addition, the Contractor's employees shall validate all their site visits through sign-off on the Work Tickets by a Building Representative (Team Leader), or designee as indicated by the
Facility Management Bureau (FMB). Work approved by the County Project Officer or designee to be performed outside of regular work hours shall be coordinated with FMB to allow access to buildings and alert other operations. The sign-off on the Work Ticket shall be considered evidence of the site visit only and shall not be construed as the County's acceptance of any work performed during the building visit or the amount of labor hours charged to the job. The Contractor's employees shall present the Work Ticket to the Project Officer, or designee, for final review and approval within a maximum of forty eight (48) hours after completing the work.

The Contractor's employees shall be required at some County buildings to sign-in at the front desk.

WORK TICKET:
The Contractor shall provide to the County with its invoices a clear and legible copy of each applicable Work Ticket showing the Work Order Number, a complete description of all work performed, indicating the date and time of arrival and departure at the facility for each employee; the County's check-in (reference) number; materials used (except small tools and consumables); hours worked, and a clear and identifiable statement signed by the Project Officer, or designee, that the work was performed. The Work Tickets should not include travel time. The sign-off on the Work Ticket shall be considered evidence of the site visit only and shall not be construed as the County's acceptance of any work performed during the visit or the amount of labor hours charged to the job.

Upon award, the awarded Contractor shall be required to provide to the County Project Officer sample copies of their standard Work Ticket, and any other form(s) proposed to be used in charging, recording or invoicing work done under this contract, for the County's review and approval.

MATERIAL AND WORKMANSHIP:
All parts used or furnished under this contract shall be new and genuine manufacturer's recommended or authorized replacement parts. Use of used parts is prohibited. Use of manufacturer rebuilt parts and components may be authorized by the County Project Officer, provided such parts and components carry the same warranty as the new parts or components. Prior written approval of the County Project Officer is required on a case by case basis when rebuilt parts are proposed for use.

The Contractor shall maintain a sufficient quantity of common repair parts (such as relays, fuses, small size contactors, screws, etc.) on its service vehicles and/or have such common repair parts immediately available from Contractor's warehouse in order to prevent unnecessary downtime of equipment.

The Contractor shall guarantee all parts and workmanship for a period of one (1) year or the manufacturer's warranty period, whichever is longer. Any repeated calls for repairs for the same reason or problem within this time period shall be made at no additional cost to the County.

COUNTY'S RIGHT TO STOP WORK:
The County reserves the unilateral right to cancel any job assigned and in progress if the Contractor, in the opinion of the County Project Officer or designee, is not performing work at a satisfactory pace or fails to perform work in a professional manner commensurate with accepted trade and safety standards. If a job is canceled, the County will reimburse the Contractor for
all work performed and all reasonable quantities of materials delivered to
the site prior to the time of cancellation. The County reserves the right to
contract for completion of such work with another vendor.

The County reserves the right to cancel any job assigned if the County, in
its sole discretion, determines that such cancellation is in the County’s
best interest. In such case, the County will reimburse the Contractor for all
work performed and all reasonable quantities of materials delivered to the
site prior to the time of cancellation.

SPECIAL TERMS AND CONDITIONS:

1. TRAFFIC MANAGEMENT: The Contractor shall be responsible for
   maintaining traffic flow, and for protection and safety of vehicles
   and pedestrians in the area affected by all Contract work. The
   Contractor must provide all signs, barricades, flashers, and flag-
   personnel required to maintain traffic flow and safety. Signs and
   other traffic control devices must be in accordance with the most
   current Virginia Department of Transportation (VDOT) standards. At
   least one Contractor employee at each site where traffic control is
   required shall be a VDOT certified flagger trained on Basic Work
   Zone Traffic Control.

2. EQUIPMENT ACCESSIBILITY: The Contractor shall provide the means and
   methods to access all equipment included in this Contract. This
   includes, but is not limited to, ladders and scissors lifts (man-
   lifts). Cost for access shall be considered Contractor overhead and
   shall not be charged separately.

3. ROOF SAFETY: The Contractor shall follow all applicable federal,
   state, and local safety requirements and regulations.

4. MATERIAL DISPOSAL: The Contractor shall be responsible for proper
   disposal of all waste and shall remove all trash and waste produced
   by service. Disposal shall be in accordance with all applicable
   local, state, and federal regulations. The Contractor shall not
   dispose of any materials in County-owned or operated refuse devices
   and/or equipment (i.e. trash cans, dumpsters, etc.).

5. SAFETY WORK PLAN: The Contractor shall provide a safety work plan
   to the County Project Officer or designee for all work requested
   unless otherwise directed by the County Project Officer or designee.
   This plan shall be submitted for approval at the beginning of the
   contract with the initial schedule and separately at County’s
   request for any project work prior to the start of work.

   The Contractor’s personnel shall wear the following personal
   protective equipment (PPE) at all times: hard hats, safety glasses,
   steel toed boots, and highlighted vests. If such PPE might prevent
   the Contractor’s employees from performing the tasks at hand, or
   create a greater hazard, the Contractor shall provide an alternative
   plan for the County Project Officer’s approval in advance of
   performing any work.

6. CODES AND STANDARDS: All work performed under this Contract shall
   be in strict accordance with all applicable codes, industry
   standards, and County Standards. Should permits for any work
performed by the Contractor be required by Arlington County, the Contractor shall prepare, submit, and obtain approval and the permit from the County. The Contractor shall be responsible for all permit fees. The Contractor shall follow and shall be responsible for coordination of all County requirements and procedures associated with impairments of fire protection equipment.

CONTRACTOR’S PERSONNEL:
The Contractor shall have at all times during the contract term a minimum of ten (10) two-person service teams, composed of an HVAC mechanic licensed journeyman and a helper (one licensed Master Mechanic shall be available to provide direction to journeymen as needed), along with an appropriately stocked service vehicle assigned to each team, available to respond to the needs of the County under this contract. All personnel used by the Contractor to perform under this contract shall be licensed and certified as required by the Commonwealth of Virginia, the State of Maryland or the District of Columbia. Service personnel should be qualified through various manufacturers’ factory training or other appropriate HVAC training to perform this type of work. The Contractor shall submit evidence of all required licensing, trades certifications and training within five (5) business days of County request at any time throughout the term of the contract. The County reserves the right to reject any Contractor’s service personnel, who, in the County’s judgment, are not adequately qualified to perform the work.

Qualification requirements:

1. **Contract Manager**
   The Contractor shall assign a qualified individual to serve as Contractor’s Contract Manager. The Contractor’s Contract Manager shall be experienced in contract management; supervision of employees; knowledgeable in all aspects of heating, ventilating and air conditioning services and equipment; and be able to consult with the County Project Officer about necessary or recommended remedies.

   The Contractor’s Contract Manager shall report to the County’s Project Officer for communication, coordination and evaluation of preventive maintenance and repair services and quality control. The Contract Manager shall serve as the single point of contact with the County for work assignments, Contractor cost proposals, and problem resolution.

   The Contract Manager shall inspect buildings covered by this contract for the purpose of ensuring quality preventive maintenance workmanship and compliance with the contract; note discrepancies and complaints; evaluate and plan for correction of deficiencies. As part of the Contractor’s Quality Control program, the Contractor’s Contract Manager shall accompany the County’s Project Officer to review the Contractor’s work at a maximum of four (4) sites each month. The Contract Manager shall meet with the County Project Officer the first Wednesday of each month to discuss preventive maintenance performance and receive feedback on all services performed, and address any performance issues. The Contract Manager shall submit a consolidated list of recommendations at each monthly meeting.

   The Contract Manager’s hours are not billable and shall be considered Contractor’s overhead.
2. Project Manager
The Contractor shall assign a qualified individual to serve as Contractor's Project Manager. The Contractor's Project Manager shall have at least two (2) years of experience in project management; supervision of employees; shall be knowledgeable in all aspects of heating, ventilating and air conditioning services and equipment, and be able to consult with the County Project Officer about necessary or recommended remedies.

The Contractor shall provide project management on an as-needed basis. The Project Manager shall be responsible for project coordination of installation, repair and replacement projects. The coordination tasks shall include, but not be limited to scheduling, ordering and delivery of equipment and materials, project oversight, coordination, and close-out (i.e. checklist, start-up, warranty, etc.). A Project Manager may only be charged for project work over $25,000 with a prior written approval of the County Project Officer.

3. HVAC Mechanic - Licensed Journeyman
The Contractor shall have at least eight (8) licensed HVAC Mechanics assigned to this Contract.

- A minimum of five (5) years experience as a journeyman commercial mechanic providing heating, ventilating and air conditioning service repairs.

- OSHA certified to use a person-lift.

- Capability to independently perform maintenance and repair to the types of heating, ventilating and air conditioning equipment included in this contract.

- Capability to analyze and trouble-shoot equipment malfunctions, determine the cause and make recommendations for repairs and prepare written proposals.

- Knowledge of the proper use of all tools and equipment required for work needed under this contract.

- Knowledge of maintenance programs and contract performance required for work under this contract.

4. Boiler Service Technician
The Contractor shall have at least two (2) licensed Boiler Service Technicians assigned to this Contract.

- A minimum of five (5) years experience as a journeyman mechanic providing furnace and boiler repairs.

- The capability to independently perform maintenance, repair and modification to the types of boilers and furnaces included in this contract.

- The capability to analyze and trouble-shoot equipment malfunctions; to determine the cause and make recommendations for repairs.
- Knowledge of the proper use of all tools and equipment required for work under this contract.

5. Water Treatment Technician
The Contractor shall have at least two (2) Water Treatment Technicians assigned to this Contract.
- A minimum of five (5) years experience in HVAC water treatment, to include flushing, cleaning, pre-treatment, training, debugging, acceptance, testing operations and chemical limit control.
- The capability to analyze and trouble-shoot equipment malfunctions; to determine the cause and make recommendations for repairs.
- Knowledge of the proper use of all tools and equipment required for work under this contract.

6. Technician Helper/Trainee
The Contractor shall have at least ten (10) Technician Helpers under training assigned to this Contract. Technician Helpers shall be apprentice or assistant furnace and boiler repair mechanics with the ability to assist in all types of furnace and boiler maintenance, repair, and modifications under the supervision of a Service Technician.

All employees shall be uniformed or otherwise neatly attired with appropriate employment identification displayed and shall conduct themselves in a professional manner at all times.

JUSTICE CENTER BACKGROUND CHECK AND SECURITY REQUIREMENTS
At least two (2) of the Contractor’s Journeymen anticipated to work on this Contract must obtain background check clearance from Arlington County Sheriff’s Office for the purpose of accessing the Justice Center. Personnel who successfully pass the background check must attend a one (1) day Arlington County Sheriff’s Office security class in order to be allowed to work in the Arlington County Detention Facility (ACDF) and Courthouse buildings. The one day training session provided by the Sheriff’s Office will include, but will not be limited to, required onsite security protocols, responsibilities and compliance with the Prison Rape Elimination Act (PREA) as specified in 28 CFR Part 115 of the Federal Registry. All personnel shall also be required to attend an annual one day security/PREA refresher training. The Contractor shall not be reimbursed for time required for ACDF security trainings.

When entering or performing work at the ACDF, any and all Contractor’s personnel carrying tools and replacement parts shall carry such tools and replacement parts in a locked tool bag or mobile tool cart with lockable drawers/doors. In addition, the Contractor shall ensure that each tool bag or mobile toll cart has a current (daily) inventory of the list of tools, replacement parts and any hazardous materials or products contained in the bag or mobile cart prior to entering and leaving the ACDF.
METHOD OF MEASURING PERFORMANCE:
The performance of the Contractor will be measured during the term of the contract by consideration of the following performance criteria:

- Failure to provide appropriately certified and trained personnel as required above in the section titled “Contractor’s Personnel.”

- Providing and adhering to the Preventive Maintenance Schedule as described in this specification.

- Number of call-backs to correct system malfunctions/failures which should have been corrected through proper preventive maintenance. More than two call-backs during any one month period may result in termination of the contract by the County for default.

- Seasonal equipment changeovers are completed by April 15 and October 15, or by dates specified by the County Project Officer.

- Response time for call-backs, requests for repair and emergencies after hour repair services. Failure to respond, as prescribed in these specifications, on two or more occasions during any one month period, may result in termination of the contract by the County for default.

- Failure to perform repairs within all applicable federal, state, and local safety requirements and regulations, to include Building Officials Court Administrators (BOCA) and local mechanical codes.

- Failure to follow industry standards for the mechanical trade in performing maintenance and repair within the time prescribed. (R. S. Means accepted industry standard). Excessive, unjustified time to complete work on three (3) or more jobs within a three-month period, may result in termination of the contract by the County for default.

- The Contract Manager’s failure to evaluate preventive maintenance performance and effectively communicate and/or report to the County’s Project Officer as required in Contractor’s Personnel section above.

TIMELY COMPLETION OF WORK:
The Contractor shall proceed diligently to complete any work under this Contract during regular work hours (unless specified otherwise) without interruption, except for scheduled lunch breaks. The County will deduct from Contractor’s invoices any charges for time spent by the Contractor’s crew on extended lunch breaks or other breaks.

Scheduling of priority work, including the interruption of a current assignment, requires the advance approval of the Project Officer. Priority work identified by the County Project Officer or designee shall take precedents over any current project work and/or preventive maintenance.

In the event of an emergency work call, the Contractor shall first attempt to assign qualified and knowledgeable employees familiar with the County and available on site rather than assigning an employee that is not familiar with the County and has to travel from another jurisdiction.

The Contractor’s sole relief for any claim for delay which is caused by the
acts and omissions of the County, and due to causes within the County's control shall be the Contractor's direct costs which result from the delay. The Contractor's sole relief on any claims for delay which were not caused by the acts or omissions of the County, or due to causes not within the County's control shall be an extension of Contract time.

SERVICES FOR OTHER COUNTY AGENCIES
This Contract is extended to other County Agencies. If other Agencies make use of this Contract a separate Purchase Order (PO) must be issued by that Agency. The Contractor management, invoices, scheduling, coordination, and payments shall be the responsibility of the Agency issuing the PO.
I. **ITEMS TO BE SERVICED**

The following equipment and components are examples and descriptions of items that shall be serviced by the Contractor. The Contractor shall provide all labor necessary to correct any and all problems with the equipment.

All motor replacements shall be the NEMA premium efficiency type of motors.

- All controls, devices, piping, equipment and ancillary components or systems which are a part of any HVAC system located in any facility the County calls for service
- Pneumatic automatic temperature control system
- Electric automatic temperature control system
- Electronic automatic temperature control system (analog/digital)
- Thermostats
- Remote control panels
- Pressure controls
- Control valves and dampers
- Sensing instruments
- Control motors
- Air compressors
- Drying units and accessories
- Air handling units for cooling and/or heating
- Air handling units, including, but not limited to: fan coil units, indoor portions of split A/C systems or heat pumps, hydronic coils, electric furnaces, gas type heating units, etc., used for the purpose of conditioning the air and/or heating
- Air cooled condensers
- Water cooled condensers
- Air filters
- Water circulating pumps (cooling tower, condenser, chilled water, condenser water, heating water)
- Water make-up valves
- Expansion tanks
- Water regulating valves including pressure control and regulating types
- Electric sensing-type float valves
- Float valves
- Direct expansion valves
- Sump pumps
- Hand valves
- Steam Traps
- Convecto units
- Hot water heaters
- Cooling towers and fans
- Evaporative condensers
- Reciprocating and scroll compressors
- Centrifugal compressors
- Electric motors
- Electric starters
- Belts and drives to both pumps and fans
- Equipment safety devices (electrical, mechanical or control)
- Heating controls not associated with boiler safeties
- HVAC packaged unit controls, valves and safeties
- Drain pans
- Supply and return registers and grilles
- Boilers and Boiler Systems:
  - Hot water boilers: This shall include the boiler, make up water controls, city water make-up water controls, water columns, sight glass, drain cocks, high and low water control and all other safety controls, burners, dampers, modulators, any type of flame proving sensor or device, and any and all other safeties, control
or monitoring devices either attached or connected in some manner as part of the boiler operating system or make up water system. It will also include safety devices, expansion tanks, air vents, relieve valves, radiators, convectors, gauges (temperature and pressure), modulating valves controlling water flow in the boiler room, blow down valves, drain valves, and boiler isolation valves, both manual and automatic, hand holes, inspection holes and man holes. All system temperature controls and thermostats; hot water pumps; seals and motors; water feed valves and pressure regulators are included, as well as fuel delivery systems: to include oil filters, oil pumps, gas and oil pressure, piping, controls for fuel delivery, regulator nozzles, etc.

- **Steam Boilers:** This shall include the boiler, make up water controls, high and low water control and all other safety devices and controls, city water auto make-up controls, burners, dampers, modulators, fire controls, and all other safety devices either attached or connected in some manner as part of the boiler operating system and make up water system. It will also include condensate tank and safety and operating controls, expansion tanks, air vents, relieve valves, radiators, convectors, gauges (temperature and pressure), modulating valves controlling water flow in the boiler room, blow down valves, drain valves, and boiler isolation valve, both manual and automatic. All system temperature controls and thermostats; hot water pumps; seals and motors; water feed valves and pressure regulators are included, as well as fuel delivery systems: to include oil filters, oil pumps, gas and oil pressure regulator, nozzles, valve trains, etc.

- **Fuel Fired Heaters:** The following further clarifies system elements to be serviced:

  - **Hot air furnaces,** beginning at the point where the return air enters the furnace including air filters and ending at the point where the hot air leaves the discharge plenum after the A/C evaporator coil. All flow switches and safety devices; electrical controls and thermostats, blower motor, inducer motors and blower wheels, bearings, belts, burners, heat exchangers, gas valve and pressure regulator, checking gas pressure to the burner to make sure it meets manufacturer’s recommendation.

  - **Oil-fired equipment** beginning at the point where the return air enters the furnace including air filters and ending at the point where the hot air leaves the discharge plenum after the A/C evaporator coil. All flow switches and safety devices; electrical controls and thermostats, blower motor and wheel, belts, burners, heat exchangers, oil valve and pressure regulator, checking fuel delivery to the burner to make sure it meets manufacturer’s recommendation, piping, fuel control delivery system, etc. It shall include replacement of the oil filter, and also checking and making sure that the burner, electrodes, transformer, cables, and ignition are all operating properly. Replace fuel oil nozzles in all equipment at the start of the season.
• Gas fired equipment begins at and includes the main gas valve on the supply line, gas line, pilot, and ignition. It includes air filters where applicable, all flow switches and safeties; electrical controls and thermostats, blower motors and wheels, belts, burners, heat exchangers, gas valve and pressure regulator, checking gas pressure to the burner to make sure it meets manufacturer's recommendations.

• Programmers, fire-eye controls, and boiler operating controllers

• All indicating instruments including, by way of illustration and not limitation, pressure and temperature measuring instruments.

• Thermal insulation of refrigerant piping and refrigerated equipment

• Supply air fans

• Return air fans

• Exhaust air fans, motors and belts

• Manual motor starters

• Magnetic starters

• Cooling coils

• Water strainers

• Unit heaters

• Duct heaters

• Unit ventilators

• Fan coil units

• Heat pumps

• All other parts, components or equipment not specifically excluded in this specification
FORMS REQUIRED TO BE PRODUCED BY CONTRACTOR


FORM 1 - INVENTORY OF EQUIPMENT

EQUIPMENT MAINTENANCE

(One per Building)

Date of initial operation

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>COMPONENT</th>
<th>MANUFACTURER</th>
<th>SERIAL &amp; MODEL NO.</th>
<th>Boiler or MOTOR H.P.</th>
</tr>
</thead>
</table>

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FORM 2 - FILTER TYPE AND REPLACEMENT SCHEDULE

AIR FILTER MAINTENANCE

(One per Building)

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>TYPES OF FILTERS</th>
<th>MEDIA OR FILTER REPLACEMENT INTERVALS</th>
</tr>
</thead>
</table>

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FORM 3 - INVENTORY OF TEMPERATURE CONTROL SYSTEMS

TEMPERATURE CONTROL SYSTEM

(One per Building)

Manufacturer of the Control System

Description of the System

Major Components

Remarks and/or Exceptions

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
SCHEDULE B

GENERAL EQUIPMENT PREVENTIVE MAINTENANCE GUIDELINES

The frequency of inspection and maintenance checks given hereinafter is a guide only. Cleaning, dismantling and general reconditioning periods are the minimum recommended. Since operating conditions such as frequency, duration, type of media handled, environmental atmosphere, as well as age and wear on unit, all contribute to the necessary frequency of a maintenance check, only County operating and maintenance personnel (using the equipment and replacement history) are qualified to set a reasonable and workable schedule. Scheduled downtime and seasonal use also dictate periods of preventive maintenance. Furthermore, this list is not all inclusive of services to be performed or frequency required, however, any deviations from the listed guidelines require the advance approval of the Project Officer.

Belts in all equipment shall be replaced as needed or every one (1) year from the date of the last replacement, whichever is lesser. Belts shall be dated with a white or silver colored permanent marker in a visible location.

The Contractor shall provide to the County documentation of the seasonal change over in the form of a seasonal change over matrix. The Contractor shall submit a building schedule for each seasonal changeover in accordance with requirements outlined in Section II. Scope of Work and call the Building Operation Supervisors for County inspection of each boiler and heat exchanger after opening and cleaning and before closing the equipment. The updated copy of the matrix shall be provided by the Contractor upon request by the County. The Contractor shall also provide upon County’s request a picture documentation of all seasonal servicing of heat exchangers, boilers, chillers, cooling towers, air handling units, and any other equipment.

The County reserves the right to require additional quality assurance, if it deems it necessary.

I. PREVENTIVE MAINTENANCE SERVICE (WATER TREATMENT)

Quality assurance:
The Contractor shall provide the following quality assurance measures:

1. Technical Services: Provide the water treatment services to include, but not be limited to, direct flushing, cleaning, pre-treatment, training, debugging, and acceptance testing operations; directing and performing chemical limit control during the contract period.

2. Field Quality Control and Certified Laboratory Reports: In addition to field tests, the Contractor, at the County’s request, shall perform comprehensive laboratory tests and provide certified laboratory test reports. Such services will be reimbursed at Contractor’s cost if the need for testing is not caused by the Contractor’s actions. If the need arises as a result of Contractor’s actions, such tests shall be performed at no cost to the County. These monitoring reports shall assess chemical treatment accuracy, scale formation, fouling and
corrosion control, and shall contain instructions for the correction of any out-of-control condition.

3. Chemicals: Chemicals shall be non-toxic and environmentally friendly, and shall follow all applicable federal, state and local requirements and regulations, including, but not limited to, the Environmental Protection Agency (EPA) requirements.

4. Occupational Safety and Health Administration (OSHA) requirements: throughout the Contract Term, the Contractor shall ensure all County’s equipment included under this Contract meets OSHA guidelines for secondary spill containment and the coupon rack provides periodic analysis of the corrosion rates occurring in all systems. Any identified (and corrected) problems shall be reported to the County by the Contractor immediately.

Execution:
The Contractor shall provide the following services per Section III. of schedule A:

1. Utilize all treatment products and parameters indicated in the Treatment Program Outline section below.

2. Inspect all feeding and control equipment on all systems.

3. Collect and analyze all water samples from all water systems.

4. Provide system checks and review program, complete with written service reports. A logbook shall be maintained at each site in accordance with the Preventive Maintenance Documentation section above and a PDF copy of the inspection results emailed to the County on a monthly basis before the 15th of the following month.

5. Report abnormal operating conditions.

6. Refer to the following for specific system services provided:

   a. Open Water Loop Systems (Condenser Water):

      i. Provide, apply and monitor the effects of the necessary chemicals to ensure scale and corrosion in the chilled water system is eliminated. Refer to the Treatment Program Outline Section for chemicals and specific parameters.

      ii. Provide, apply and monitor the effects of the necessary chemicals to control algae and slime growth in the cooling tower and condenser. Refer to the Treatment Program Outline Section for chemicals and specific parameters.

      iii. Provide service visits per frequencies indicated in Schedule B to perform at the minimum all listed tasks to check equipment, replenish chemicals, set feed/bleed, and analyze water.

      iv. If during the operating season there is an indication of a slime or scale deposit in the condenser the Contractor shall chemically clean the condenser at no additional cost.

   b. Closed Water Loop Systems (Chilled and Heating Water):
1. Provide, apply and monitor the effects of the necessary chemicals to ensure scale and corrosion in the closed systems is eliminated. Refer to the Treatment Program Outline Section for chemicals and specific parameters.

2. Provide service visits per requirements and frequencies indicated in Section III. of Schedule A to monitor treatment of these systems.

7. The County shall notify the Contractor when a closed loop is to be drained down for any work other than that performed by the Contractor.

Water Treatment Program Outline:
The Contractor shall ensure that all Work performed and products used under this Agreement are in accordance with all applicable regulations and standards.

1. Open Water Loop Systems (Condenser Water)
   
a. Scale and corrosion control:
   
i. All products used shall incorporate an organic corrosion inhibitor and azole for superior corrosion protection. This product incorporates and advanced phosphonate for control of calcium, phosphate and iron impurities. It provides superior scale and corrosion protection where higher cycles are required without the use of acid.

   ii. All products used for the new cooling towers shall be designed to provide pH control for prevention of white rust on new galvanized cooling towers. The products shall contain HEDP, molybdate, azole, polymer and co-polymer for complete scale and corrosion protection.

b. Microbiological Control:
   
i. All products used shall be 1.5% active solution of an isothiazolone microbiocide extremely effective at concentrations down to 1.0 parts per million. The products shall be active at controlling algae, slime-forming bacteria, and fungi normally encountered in commercial and industrial cooling water systems. Also effective across a pH range of 6.0-12.0. It shall be non-surface active and will not cause foam. A “contact time” of 4-6 hours is recommended for an effective kill.

   ii. All products used shall be (THPS) Tetrakis (Hydroxymethyl) Phosphonium Sulfate based broad spectrum microbiocide. The products shall be very effective against sulfate-reducing bacteria. This product is not compatible with oxidizing biocides.

2. Closed Water Loop Systems (Chilled and Heating Water)
   
a. Corrosion Control: All products used shall be designed to provide superior corrosion control in hot and chilled closed loop systems. Shall incorporate a synergistic blend of molybdate, nitrite, azole, iron polymer along with a borate buffer. The products shall be compatible with glycol.
3. Parameters: The Contractor shall maintain all systems free of scale, corrosion, and fouling (biological growth). At all times throughout the duration of this contract, the Contractor is responsible for verifying and confirming that the limit, range and testing needed for each equipment covered by the contract is in accordance with the below specifications. The Contractor should immediately report (to include any recommendations) to the County Project Officer if any equipment under this contract does not fall within the limit, range and/or testing requirements as stated in the tables below:

### Open Water Loop Systems (Condenser Water)

<table>
<thead>
<tr>
<th>LIMIT</th>
<th>RANGE</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity</td>
<td>1000 - 1500 umhos</td>
<td>Conductivity Meter</td>
</tr>
<tr>
<td>Chlorides</td>
<td>100 - 150 PPM</td>
<td>Drop Test</td>
</tr>
<tr>
<td>Calcium Hardness</td>
<td>800 max.</td>
<td>Drop Test</td>
</tr>
<tr>
<td>Inhibitor</td>
<td>0.5 - 1.4</td>
<td>Mo Colorimeter</td>
</tr>
<tr>
<td>pH</td>
<td>7.5 - 10.5</td>
<td>pH Meter</td>
</tr>
</tbody>
</table>

### Closed Water Loop Systems (Chilled and Heating Water)

<table>
<thead>
<tr>
<th>LIMIT</th>
<th>RANGE</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity</td>
<td>5000 umhos max.</td>
<td>Conductivity Meter</td>
</tr>
<tr>
<td>pH</td>
<td>7.5 - 10.5</td>
<td>pH Meter</td>
</tr>
<tr>
<td>Sodium Nitrite</td>
<td>800 - 1500 PPM</td>
<td>Drop Test</td>
</tr>
<tr>
<td>LG-62</td>
<td>20 - 30 PPM</td>
<td>Moly Drop Test</td>
</tr>
</tbody>
</table>
II.  PREVENTIVE MAINTENANCE SERVICES (MECHANICAL)

Off-Season Cleaning and Seasonal Start-up - The Contractor shall perform and complete all off-season cleaning no later than March 15 (for heating to cooling) and September 15 (for Cooling to heating) of each Contract year, as specified by the County Project Officer. The Contractor shall perform seasonal start-up by April 15 (for heating to cooling) and October 15 (for Cooling to heating) of each Contract year, as specified by the County Project Officer. The contractor shall submit to the County Project Manager a final completed copy of the seasonal change over matrix on March 15 (for heating to cooling) and September 15 (for Cooling to heating).

1. COMPRESSORS (Air)
Compressors in this section are reciprocating and/or rotary units with electric motor driver.

Monthly

Report any problems found during PM to the County Project Officer.

a. Blow-down receiver.
b. Check outlet air pressure, and pressure regulator and adjust as needed.
c. Blow-down moisture separator.
d. Check crankcase oil level and add oil if needed.
e. Check tank pressure check stop-start control operation.
f. Check head pressure relief valve for leaking and proper operation.
g. Check unit for noises or vibration.
h. Check compressor and motor bearings for noises and proper lubrication.
i. Check and clean intake filter.
j. Lubricate motor.
k. Replace crankcase oil as needed.
l. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.
m. Check belt tension, adjust as needed or replace. All replacement belts shall be dated in a visible location.
Yearly

Report any problems found during PM to the County Project Officer.

a. Check compressor for possible compression problems or air leaks.

b. Check and clean air cooler condenser coil, fan blades and Cabinet.

c. Change crankcase oil.

d. Clean motor air cooling passages.

2. CONTROL SYSTEMS

Control systems vary from a simple self-contained control valve to the most automatic computer controlled monitoring systems and a schedule for maintenance is impossible to outline. The system may be pneumatic, electric, or electronic and the complexity determines the service required.

All control systems shall be reviewed, inspected and calibrated to properly execute a seasonal changeover (twice per year) by testing and cycling of all equipment as an individual control loop and/or as a system after it has been serviced, adjusted or calibrated to assure that the system operates properly.

Diaphragm valves and actuators, along with simple pneumatic controllers including thermostats, shall be serviced, calibrated and adjusted as needed. However, since control systems are such a specialized field, trained control servicemen are required to provide the services under the Contract. When necessary coordinate with the County’s facilities maintenance office to have system operation adjusted necessary for proper P.M. Call 703.228.0766 for buildings with DDC systems and speak with the BAS control operator on duty.

3. COOLING FACILITIES (Air Conditioning and Refrigeration)

This section includes split, packaged self-contained units to large built-up chilled water units and their related components.

(A) Air Conditioning (Refrigeration Systems)

Monthly

Report any problems found during PM to the County Project Officer.

a. Check the general operation conditions, system pressures or superheat, refrigerant sight glass, amperage of motors check condition of wiring etc. and record.

b. Check and record compressor oil level. If the level remains low, contact the County Project Officer before adding oil. Use oil per manufacturer’s recommendation.
c. Observe and record oil pressure when available. The oil pressure gauge reading should be 20 to 35 psi above the CRANKCASE pressure gauge reading.

d. Check the condition of all associated system air filters and air handling equipment and replace filters as per Section 3.B (Air Handling Units) below.

e. Lubricate fan and motor bearings, if applicable.

f. Check belt tension and alignment, adjust or replace as needed. This includes heat wheel belts. All replacement belts shall be dated in a visible location.

g. Check all sheaves and couplings, tighten if loose, check alignment and wear.

h. Check condition of condensing equipment.
Air cooled: observe condition of condenser coil; clean as necessary for energy efficient operation. Water cooled: check cooling tower water; clean tower sump strainer screen and check operation of cooling tower floats and blowdown.

i. Inspect all equipment for excessive noise and vibration and adjust or repair to correct.

j. Take amperage reading of motors and compressors and record in work ticket for each piece of equipment.

k. Check refrigerant pressures or superheat and refrigerant charge.

l. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

Seasonal Shut-down Services
Pump down system and valve-off the bulk of the refrigerant charge in the condenser to minimize refrigerant loss through seals.

a. Hermetic Compressor Pump-Down
Close the liquid line shutoff valve of the condenser and run until the compressor stops on low suction pressure. Disengage compressor disconnect switch and frontseat the compressor discharge and suction valves.

NOTE: Do not allow compressor to pump the suction side to a vacuum. A slight positive pressure prevents air and moisture from being drawn into the system through seals. Close supply and return water connections of water-cooled condenser. Allow condenser to remain full of water and if subjected to freezing temperatures, fill with antifreeze solution. Drain cooling tower or evaporative condenser and lock system master disconnect in open position.
Seasonal Start-up
After cleaning the tower perform all annual maintenance or seasonal start-up as itemized. Fill sump of cooling tower, or evaporative condenser as required. Open shut-off valves of water-cooled condenser. Check liquid line solenoid valves and automatic control. Open liquid line shut-off valve. Back-seat compressor suction and discharge valves. Start system. After 15 to 20 minutes, check refrigerant charge/superheat and compressor oil level sight glass. If satisfactory, readjust the system temperature controller to the proper temperature setting in conjunction with Section 2, Control Systems. Record and report within one week in writing all readings or any problems to the County Project Officer.

Fan Coil Units:
Annual: Fill and bleed the entire system (building) loop including individual fan coil units. Verify and record condition of coil by performing coil cleaning.

Monthly: Identify any system leaks. Replace air filters. Determine the fan coil unit control valve or valves work and the unit functions in conjunction with its associated TSTAT.

(B) Air Handling Units
This may be part of a package unit or a built-up unit consisting of fan, plenum, coils, humidifier, sprays, eliminators, filters, louvers and controls. Those units needing P.M. are covered as individual items.

a. Note: All filters where tracks are available shall be the 3M-link type with non-migrating tackifier for one and two inch filter. Where an individual filter is to be used, the pleated type filter shall be used. Where bag filters are required a non moisture absorbency type shall be used with a minimum 80-85% efficiency, with a minimum of 45% efficiency when new. The filters are to be installed with no gaps between filter and no spacer is acceptable. Box filters shall be used in the Courts Police Building with the same requirement as outlined for bag-type filters.

b. Replacement schedule of filters shall be as follows unless indicated in the exceptions below:

Bag and box filters - within a minimum of one (1) year of the last replacement, or sooner if necessary. Link filters - within three (3) months, or sooner if necessary. Pleated filters - monthly, no exceptions unless where indicated in this solicitation. All filters shall be clearly dated with the date of replacement.

Contractor’s failure to adhere to this filter replacement time schedule will result in a deduction from the monthly contract price for that facility pro-rated on a percentage of days for that month that the Contractor was in violation.
Exceptions: Filter replacement for the RTUS at Walter Reed Community Center shall be as follows:

- 4" box filters in front of cooling coil shall be replaced two (2) times per year. Some units may require annual replacement of filters, as specified by the Project Officer.
- 4" box filters on economizer shall be changed monthly.
- 2" pleated filters shall be changed monthly.
- 4" box filters in front of cooling coil shall be replaced once (1) time per year. Some units may require semi-annual replacement of filters, as specified by the Project Officer.

c. Replacement of only some of the filters in one unit is not acceptable. All filters are to be replaced at the same time.

Monthly

a. Replace filters following the above schedule.

b. Feel fan and motor bearing housings for excessive heat.

c. Check for vibration and unusual noise and adjust or repair to correct.

d. Lubricate fan and motor.

e. Check belt tension and adjust or replace as necessary. All replacement belts shall be dated in a visible location.

f. Check end play (set collars or thrust bearing).

g. Check and record motor amperage.

h. Check coupling alignment.

i. Check bearing play.

j. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

(C) Water and Air-cooled Chillers

Monthly

Report any problems found during PM to the County Project Officer.

a. Check and record condenser pressure.

b. Check and record evaporator pressure and temperature.
c. Check and record water temperature in and out of evaporator and condenser.

d. Check and record oil temperature and level in compressor.

e. Check and record refrigerant charge. Report conditions outside of manufacturers specifications to the Project Officer.

f. Check for crankcase sweating.

g. Check compressor bearings for heat and noise (if applicable).

h. Check purge unit, if applicable.

i. Check controls and wiring for burned connections and insulation.

j. Visually check for oil leaks and oil level.

k. Check for unusual knocks or noise.

l. Check and record amperage.

m. Check CPC’s containment equipment for proper operation.

n. Check for crankcase heater operation.

o. Check condenser coils and clean as needed.

p. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

Yearly

a. Drain condenser and punch tubes.

b. Check oil heater during shutdown and place into operation.

c. Change compressor oil.

d. Clean and examine purge unit.

e. Check for leaks.

f. Clean motor frame, particularly air passages.

g. Verify and record by test all safeties and controls associated with the unit.

h. Do oil analysis test of compressors 5 tons and larger and provide test report no later than one month after the test.
i. Clean condenser coil on all air-cooled chillers.

4. COOLING TOWERS & EVAPORATIVE CONDENSERS

Monthly (12 month and seasonal operation)

Report any problems found during PM to the County Project Officer.

a. Check water level in sump.

b. Check makeup valve and adjust the supply valve mechanism as needed.

c. Check temperature leaving tower with suitable tool other than the gauge on the equipment and number of fans operating, thoroughly check any abnormality.

d. Check spray nozzles and clean as needed.

e. Check sump heaters, if so equipped and make sure they are working during winter season operation.

f. Lubricate fan and motor bearings and gearbox, if so equipped.

g. Check belt tension, adjust as needed, or replace. All belt replacements shall be dated in a visible location.

h. Feel for unusual vibration.

i. Clean sump strainer as needed.

j. Inspect cooling tower basin for leaks.

k. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

Semi-annually (12 month operation)

a. Drain and clean sump and strainer.

b. Clean nozzles and headers.

c. Inspect fill; recommend if replacement is needed for efficient operation of the equipment.

d. Clean and adjust fans and drives.

e. Tighten all nuts and bolts.

Annual (12 month operation)

a. Flush pumps and cooling tower sump. Remove dirt, rust
and/or corrosion, clean screens. Remove rust from tower sump, walls, distribution box and other tower component and paint with the manufacturer recommended paint.

b. Clean nozzles and headers.

c. Inspect fill; recommend if replacement is needed for efficient operation of the equipment.

d. Clean and adjust fans and drives.

e. Drain and clean strainers in condenser lines.

Seasonal Shutdown (Seasonal operation)

a. Flush pumps and clean cooling tower sump. Remove dirt, rust and/or corrosion, clean screens. Remove rust from tower sump, walls, distribution box and other tower component and paint with the manufacturer recommended paint.

b. Clean nozzles and headers.

c. Inspect fill; recommend if replacement is needed for efficient operation of the equipment.

d. Clean and adjust fans and drives.

e. Drain and clean strainers in condenser lines.

Seasonal Start-up (Seasonal Operation)

a. Flush tower of all debris and fill tower sump.

b. Check belt tension, adjust as needed, or replace. All belt replacements shall be dated in a visible location.

c. Lubricate fan and motor bearings and gearbox, if so equipped.

d. Check condenser pump and lubricate. Check for loose couplings, vibrations, and any unusual noise.

e. Run condenser pump and check tower operation.

f. Check fan and pump motors and repair as necessary.

g. Clean nozzles and headers.

h. Check make-up water valves and controls for proper operation.

i. Report any problems to the County Project Officer.

5. DAMPERS
Dampers in this section are air dampers, either fixed, gravity opening
or closing, mechanized, or fire.

Quarterly

a. Inspect and adjust operation.
b. Inspect and clean blades and screen.
c. Lubricate bearing points.
d. Check control actuator and linkage.

6. HUMIDIFIERS
Package, self-contained units.

Monthly

Report any problems found during PM to the County Project Officer.

a. Clean all components, including the elements, paint as required to maintain efficient operation of the equipment.
b. Lubricate motor.
c. Check electrical control and power supply wires.
d. Check drain; clean and flush tank or reservoir.
b. Check steam and water supply hoses and connection.
f. Check condition of tank and drain if so equipped.

7. DUCTS (Air)
Contractor shall perform monthly visual inspections and identify to County Project Officer any problem with the air distribution systems that they uncover as they perform preventive or corrective maintenance through the County facilities. This will include damaged air ducts, air leaks, loose insulation, disconnected ducts, torn flexible ducts, loose or missing hangers, dirty diffusers, etc.

8. EXHAUST HOODS
Exhaust hoods are usually installed to trap and expel either hot or contaminated air. Kitchen and some other special hoods include wash cycles and fire extinguishing systems.

Monthly

a. Inspect for cleanliness, including filters and eliminators or baffles; clean as required to maintain efficient operation of the equipment.
b. Check fan blades for lint and grease.
c. Check belt tension, adjust or replace as necessary. All
d. Feel bearings for excessive heat.

e. Clean filter.

f. Inspect ductwork and weather cap for accumulation of grease; clean, as required, to maintain efficient operation of the equipment.

Yearly

a. Remove fan and motor; clean and oil.

9. **FANS, EXHAUST**

Exhaust fans are package units, roof and wall exhausters and the like. Large fans set in plenums or ducted for exhaust are to be treated as fans.

**Monthly**

Report any problems found during PM to the County Project Officer.

a. Check louver operation and screen openings.

b. Check belt tension adjust and replace as needed. All belt replacements shall be dated in a visible location.

c. Check for excessive noise.

d. Check for accumulation of lint and dirt. Clean as required to maintain efficient operation of the equipment.

e. Clean and lubricate fan and motor.

f. Check enclosure (especially outdoor housings). Report any problem to County Project Officer to repair or replace as needed.

g. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

10. **FANS, SUPPLY and RETURN (AHU’s)**

**Monthly**

a. Check fan and motor bearing housings for excessive heat and play.

b. Grease or lubricate (caution not to over grease or over lubricate).
c. Check for vibration and unusual noise and adjust or repair to correct.

d. Record lubrication of fan and motor.

e. Check belt for wear and proper tension, adjust. Replace as needed. All replacement belts shall be dated in a visible location.

f. Check end-play (set collars or thrust bearing).

g. Check motor amperage and record reading. Identify any abnormality.

h. Clean fan wheel, blades and casing of dirt and other foreign matters to prevent accumulation and unbalanced operation.

i. Check fan for out of round or indication of being out of balance.

j. Check drive sheaves and set screws or other fasteners.

k. Clean motor housing and air vent opening in casing for proper cooling.

l. Replace filters following instructions in Section 3.B.

11. FILTERS (Throw-a-way)

Monthly

a. Check to see that dust is not leaking through joints.

b. Check static pressure drop across filters (large air handling units), where applicable. Record the readings for the BOX and Bag type filters and 3-M link type filters.

c. For replacement of filter follow the schedule in Section 3.B.

Yearly

a. Check filter frame or rack, clean and record if a repair is required to maintain efficient operation of the equipment.

b. At the end of each season replace filters, unless just recently replaced. Record service or status of the filter.

12. HEAT EXCHANGERS (Liquid to Liquid or Steam to Liquid) Includes shell and tube or plate type. The Contractor shall provide a photographic report of all heat exchangers as a part of the seasonal change over report.
Monthly

a. Check and record leaving and entering temperatures, trap discharge and pressure where applicable, with suitable tool other than the gauges on the equipment.

b. Adjust control valve and/or control sensor, if necessary.

c. Blowdown heat exchanger and check for leaks.

Yearly

a. Open tube bundle or separate plates and clean tubes and shell or plates, inspect for corrosion. Replace gaskets and repair tubes or plates as required.

b. Clean trap and check operation.

c. Check insulation; repair as required to maintain efficient operation of the equipment.

13. HEATING FACILITIES

The heating facilities can range from a small package self-contained warm air furnace, steam or hot water boiler supplying heat to an area or building, a large central HVAC unit with a distribution system supplying heat to the building or just a heat pump.

All hot water or steam generating units shall be visually checked for any abnormalities in operation monthly while in season. This is very important where reheat is necessary. Report any problem to County Project Officer.

The heating facility may include any of the following:

(A) Air Handling Units

An air handling unit may be a simple fan and enclosure as fan coil units to a large built-up unit with fan, electric heat coils, louvers, filters, water or steam coils, humidifiers, dehumidifiers, sprays, plenums, sumps, and drains.

(B) Heating and Ventilating Units

Monthly

a. Replace filters following notes in Section 3.B above.

b. Check motors, fan blades for dirt or foreign matter. Clean as necessary.

c. Lubricate motors and bearings as needed.

d. Check controls for proper operation. Adjust or identify repairs needed to County Project Officer.

e. Check control panel, control devices, and safeties within
equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

Yearly

a. Check control (fan, coil, burner pilot and electronic ignition system, gas valves, and any other component).

b. Lubricate fan and motor.

c. Clean coils and/or burner on wall or ceiling hung forced gas air heaters, hot water and electric. Check for cracked or corroded heat exchanger.

d. Clean louvers and screens.

e. Clean coils in fan coil units or convector from any dirt not collected by filters.

(C) Induction Units

Monthly

a. Check water piping for leaks and corrosion.

b. Check drain functioning, clean as needed.

c. Inspect and clean coils as required to maintain efficient operation of the equipment.

d. Check control valve operation with thermostat.

e. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

(D) Infrared Heaters

Infrared heaters are a self-contained unit, gas fired with electric control and ignition.

Yearly

a. Seasonal start-up. Clean the burner face of ceramic tile and venturi inlet with low pressure air.

b. Adjust electrode gap and position at pilot. Check pilot solenoid valve.

c. Replace filter.

d. Check and record discharge temperature of trap to identify if it is dumping properly and that there is no blow through.

e. Vacuum burners and clean heat exchangers, check for cracks
and rust if applicable.

f. Check flue pipes.

g. Check burners, adjust gas valve and burners, clean pilot.

h. Clean blower wheel if needed.

i. Oil and lubricate motor, check motor mounts.

(E) Unit Heaters (Gas, Electric or Oil Fired)
Unit heaters are self-contained and may be direct or indirect fired, floor or ceiling mounted, yet are essentially the same. The air is brought through the unit or plenum by a propeller or squirrel cage fan, heated and discharged to the area served. They may also be equipped with dampers to switch from recirculated to fresh (outside) air or mix the two in any proportion.

(1) Quarterly

a. Lubricate fan and motor.

b. Check burner or nozzle for proper air mixture and adjust as needed.

c. Check secondary air supply for complete combustion.

d. Check electric elements, sequencers, limit controls, etc.

e. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

(2) Yearly

a. Clean and inspect combustion chamber and burners and/or casing in direct fired units for cracks, rust and pin holes.

b. Vacuum burners and clean heat exchangers.

c. Check flue pipes, crock and chimney, for corrosion, and cracks for possible leaks of combustion gasses.

d. Check burners and gas valve and adjust to specifications, clean pilot and adjust flame for proper combustion.

e. Clean blower wheel if dirty or out of balance.

f. Oil and lubricate motor, check for noise and vibration.

g. Check safety controls on burner, thermostat and
operation.

h. Adjust primary air mixture and check for proper secondary air supply to unit.

i. Check all electric elements, sequencers, limit controls, etc.

(F) Heat Pump Units
Perform and record a complete seasonal service, inspection and test. The service shall consist of: cleaning the condenser coil and associated air handling unit coil, as needed for proper and energy-efficient operation; replacing the AHU filters (follow guidelines of Section 3.B above); checking the refrigerant charge and adjusting; lubricating the heat pump unit fans and/or AHU fan motor, as required; checking wiring for burned or loose wires; checking amperage and capacitors. Check electric elements sequencers, limit switches, calibrate thermostat, check heater elements, sequencers, and limit switches for proper operation.

The inspection and test shall also include the following:

a. Observation of excessive noise and vibration for both the heat pump unit and the AHU.

b. Transfer of the unit from the previous seasonal control mode (Note: If the system has already been manually switched over, shut unit down, perform service requirements and proceed to inspect and test by starting-up the system).

c. Verification that the complete system is in operation and functioning correctly, including the AHU and electric heaters.

d. Lubricate all associated equipment, e.g. fans and motors.

e. Measure the compressor suction and discharge pressures or superheat.

f. Confirm that unit has the proper refrigerant charge, and adjust as needed for proper, efficient operation.

g. Measure the compressor amperage at load.

h. Check capacitors for proper operation.

i. Verify proper cycling of the reversing valve, and defrost cycle (this includes verifying the defrost timer motor or board and defrost thermostat are functioning properly and auxiliary heaters are working properly).

j. Verify the entire system control is satisfactory.

Monthly

a. Inspect and record the system's superheat.
b. Observe and record excessive noise and vibration.

c. Replace filter, see Section 3.B.

d. Record all abnormalities and report them to the County Project Officer.

e. Record Superheat, amperage draw, check operation.

f. Check the operation of the auxiliary and emergency electric heaters.

h. Check control panel, control devices, and safeties within equipment for loose connections, wire overheating, corrosion, burnt-out contacts or evidence of component failure.

**Bi-Yearly (End of season)**

a. Follow recommendations outlined in Section (F) under heat pumps.

b. Report equipment's condition and any required service that is necessary to the County Project Officer within five (5) business days in writing.

(G) Boilers

1. Preventive and Routine Maintenance - During the heating season (October 15 through April 15) the Contractor shall perform Preventive and Routine Maintenance on the listed equipment monthly, with call-back repairs to be made as required to bring the equipment back on line, and maintain its operation.

   Preventive Maintenance shall be performed monthly, and, at a minimum include:

   a. High and Low Water Cut-out Safety Check - open boiler, drain valve and lower boiler water level to check safety and make-up water level, check expansion tank for excess water and adjust as needed, check water make up valve or controls are working properly, check condensate tanks and controls for proper operation, check pressure gauge for proper operation;

   b. Clean water gauge glass and peep glass for burners, replace as needed;

   c. Assure proper setting and operation of pressure temperature controls, by checking operation of high limit controller and manual reset operation;

   d. Assure proper operation of combustion system, and check all safeties and air proving switches;

   e. Check low and high gas pressure switch: check
equipment for evidence of under or over tire and correct. Check all cover for loose or missing screws, bolts, and nuts, secure as needed.

f. Assure programming control work:

i. Oil Burner (bi-monthly while in season):

- Perform cleaning of burner nozzles and strainer.

- Check CO2 levels and provide print out to the County Project Officer, replace filter, adjust burner for maximum efficiency and make any adjustments as needed.

- Perform test with flue gas analyzer and provide print-out to the County Project Officer.

ii. Gas Burner (monthly while in season):

- Gas pilot adjustment, if necessary. Check for evidence of improper gas pressure delivery to burner.

- Inspect damper motor and auxiliary switches.

- Inspect air damper adjustment. Check screens for dirty buildup.

- Inspect all safety devices.

- Inspect all related piping.

- Perform combustion efficiency test.

g. Submit a written report of the inspection with all ambient conditions to the County Project Officer. Dates for these inspections shall be provided in the Preventive Maintenance schedule.

2. Contractor shall perform seasonal cleaning service and start-up procedures including cleaning of tubes, smoke hood, tube sheet and other parts of the boiler. All defective seals and gaskets shall be replaced. The Contractor shall repair any damages to refractory and apply one coat of approved manufacturer refractory paint or sealant, perform safety relief valve check and check test controls according to Virginia State Code, and perform an efficiency performance test. If the efficiency test indicates the boiler is not performing at its rated efficiency, make the necessary adjustments to achieve (or exceed) the manufacturers' rated efficiency. If the equipment's age or other factors prevent achievement of high efficiency without unusual repairs, state the reasons on the Work Ticket and notify the County Project Officer at
the next monthly progress meeting. Compile efficiency test results into a spreadsheet for all boilers under this contract and submit this spreadsheet to the County Project Officer.

After completion of the cleaning the Contractor shall not close the boiler until the County Project Officer has completed his inspection. The Contractor shall have all boilers ready for inspection by September 1 of each Contract year. Upon notification by the Contractor, the County will inspect the boiler(s) and provide comments to the Contractor within 14 calendar days. The Contractor also shall:

i. Check the condition of mainstream valve, lubricate valve stem, and operate the valve.

ii. Open and clean low/high water float control assembly and set levels for proper condensation and "city" water make up. Set pressure regulator to correct pressure.

iii. Check for proper operations of the condensate pumps, clean tank, check all associated piping, pumps and seals and return water temperature, clean sight glass and replace if necessary.

iv. Clean and blow down sight glass, open hand hole on water side, inspect, clean and flush water side. Report any work needed before start up.

v. Remove and clean burner eye and flame sensing device. Check operations to make sure boiler turns on and off.

vi. Remove and clean assembly and diffuser. Replace burner nozzle and adjust electrodes for proper firing condition.

vii. Adjust and lubricate all dampers and burner linkage.

viii. Check operation of low and high gas pressure safety switch.

ix. Start boiler up and valve over building for season. Check return and supply for proper operating condition. Check all radiators and convector for proper heat delivery to each, check the expansion tank for proper operation, if adjustment to the expansion tank water level is needed, then the make-up water or pressure regulating valve are checked, adjusted, or replace it necessary. This shall be completed prior to September 1.

x. Prepare a report addressing the results of the efficiency performance test, and the need for any repair or replacement of deficient safety controls.
for each boiler. This shall be provided to the County Project Officer no later than September 15, with a quote for repairs, if required.

All boilers shall be fired, and the complete system tested before September 15, (or the date specified by the County Project Officer), to make sure that all the system components are working properly.
### III. ESTIMATED EQUIPMENT COVERED by CONTRACT (BY BUILDING LOCATION and Schedule of Services) (Water Treatment)"

<table>
<thead>
<tr>
<th>NO</th>
<th>Building</th>
<th>Address</th>
<th>Systems</th>
<th>Service Call Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arlington Mill Community Center</td>
<td>909 S. Dinwiddie St.</td>
<td>Condenser water (cooling tower), chilled water and heating water</td>
<td>1,2,3,4, 5,6,7,8, 9,10,11,12</td>
</tr>
<tr>
<td>2</td>
<td>Aurora Hills Center</td>
<td>735 S. 18th Street</td>
<td>Heating water, condenser water (cooling tower)</td>
<td>1,2,3,4, 5,6,7,8, 9,10,11,12</td>
</tr>
<tr>
<td>3</td>
<td>Carlyn Hall</td>
<td>5711 S. Irving Street</td>
<td>Heating water</td>
<td>1,10</td>
</tr>
<tr>
<td>4</td>
<td>Community Residence</td>
<td>1212 S. Irving Street</td>
<td>Heating water</td>
<td>1,10</td>
</tr>
<tr>
<td>5</td>
<td>Fairlington Community Center</td>
<td>3308 S. Stafford St.</td>
<td>Heating water</td>
<td>1,4,8,10</td>
</tr>
<tr>
<td>6</td>
<td>Fire Station # 5</td>
<td>1750 S. Hayes Street</td>
<td>Heating water</td>
<td>1,4,8,10</td>
</tr>
<tr>
<td>7</td>
<td>Department of Parks and Recreation (DPR)</td>
<td>2700 S. Taylor Street</td>
<td>Condenser (cooling tower), heating and chilled water</td>
<td>1,2,3,4, 5,6,7,8, 9,10,11,12</td>
</tr>
<tr>
<td>8</td>
<td>Residential Program Center</td>
<td>1554 Columbia Pike</td>
<td>Chilled water (air cooled), Heating water</td>
<td>1,4,8,10</td>
</tr>
<tr>
<td>9</td>
<td>Shirlington Library</td>
<td>4200 S. Campbell Ave.</td>
<td>Condenser (cooling tower), heating and chilled water</td>
<td>1,2,3,4, 5,6,7,8, 9,10,11,12</td>
</tr>
<tr>
<td>10</td>
<td>Solid Waste/Traffic Division</td>
<td>4300 S. 29th Street</td>
<td>Condenser and heating water (cooling tower)</td>
<td>1,2,3,4, 5,6,7,8, 9,10,11,12</td>
</tr>
<tr>
<td>11</td>
<td>Walter Reed Community Center</td>
<td>2909 S. 16th Street</td>
<td>Air cooled chilled water, heating water</td>
<td>1,4,8,10</td>
</tr>
<tr>
<td>12</td>
<td>WETA Building</td>
<td>3700 S. Four Mile Run Dr.</td>
<td>Heating water</td>
<td>1,4,8,10</td>
</tr>
<tr>
<td>13</td>
<td>Water/Sewer/Streets</td>
<td>4202 28th Street</td>
<td>Heating water</td>
<td>1,10</td>
</tr>
</tbody>
</table>

**NOTE:** Seasonal changeovers occur on April 15th and October 15th of each year (unless otherwise requested by the County). All applicable service calls that occur in these months will be performed after the changeovers. Additional water technology service call will be based on the Contractor's contracted rate. The bidder is responsible for verifying the list and type of equipment in this table. Numbers 1 through 12 are representation of January through December for servicing.