
REQUEST FOR PROPOSALS
RFP NO. 03-2018

GROUNDWATER REMEDIATION SYSTEM
HARDWARE/SOFTWARE MODERNIZATION

OPENING: SEPTEMBER 6, 2017 AT 2:00 P.M.
PRE-PROPOSAL CONFERENCE: AUGUST 08, 2017 AT 11:00 A.M.

BUYER: Jalene Duressa, Buyer
PHONE: 410-313-0037 ▪ EMAIL: jduressa@howardcountymd.gov



HOWARD COUNTY, MARYLAND

OFFICE OF PURCHASING

6751 Columbia Gateway Drive, Suite 501, Columbia, MD 21046
www.howardcountymd.gov/departments/county-administration/purchasing



Formal RFPs and RFP Results are available on our website

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**IMPORTANT: ADVISE THE ISSUING OFFICE IMMEDIATELY
IF ANY OF THE ABOVE SECTIONS ARE NOT ENCLOSED IN THIS DOCUMENT.**

SECTION A

KEY INFORMATION SUMMARY

RFP Number:	03-2018
RFP Name:	Groundwater Remediation System Hardware/Software Modernization
Issue Date:	[Posted on Website Date]
Buyer:	Jalene Duressa jduressa@howardcountymd.gov 410-313-0037
Pre-Proposal Date:	August 8, 2017 at 11:00 A.M.
Pre-Proposal Location and Registration:	Alpha Ridge Landfill, 2350 Marriottsville Road, Marriottsville, MD 21104 Please register by contacting Alex Shaw ashaw@howardcountymd.gov .
Questions Due and to Whom:	Questions due no later than 4:00 p.m. on August 14, 2017 Submit questions to: Jalene Duressa at jduressa@howardcountymd.gov . Questions must be submitted to the Buyer at the email address listed above.
Proposal Due:	September 6, 2017 PRIOR TO 2:00 P.M. EST
Mail/Deliver Proposals to the Issuing Office:	Office of Purchasing 6751 Columbia Gateway Dr., Ste. 501 Columbia, MD 21046 410-313-6370 PLEASE REMEMBER THAT TECHNICAL AND PRICE PROPOSALS ARE TO BE PLACED IN <i>SEPARATE</i> SEALED ENVELOPES.
Agreement Term:	One year with 4 one-year renewal options
Bid Deposit/ Performance Bond:	5% 100%
EBO Subcontracting Participation:	10% goal

MINORITY BUSINESS ENTERPRISES are encouraged to respond to this solicitation. For more information, please contact the Equal Business Opportunity Coordinator at 410-313-3694.

IMPORTANT NOTICE REGARDING ADDENDA

Addenda to solicitations often occur prior to bid opening. It is the potential Contractor's responsibility to visit the Office of Purchasing web site for updates to solicitations.

www.howardcountymd.gov/departments/county-administration/purchasing

SECTION B**PURCHASE ORDER TERMS AND CONDITIONS**

The following terms and conditions apply to all Purchase Orders issued by Howard County and are applicable to all purchases made as a result of this solicitation.

- 1 No purchase of materials, supplies, equipment, and/or services will be recognized unless made through the Office of Purchasing.
- 2 The County may at any time insist upon strict compliance with these terms and conditions, notwithstanding any previous custom, practice or course of dealing to the contrary.
- 3 The terms and conditions of sale as stated in this Purchase Order govern in the event of conflict with any terms of the Contractor's bid, and are not subject to change by reason of any written or verbal statements by the Contractor or by any terms stated in the Contractor's acknowledgement without prior written authority from the Office of Purchasing.
- 4 If the price is omitted on the Purchase Order, except where the Purchase Order is given in acceptance of quoted prices, it is agreed that Contractor's price will be the lowest prevailing market price and in no event is this Purchase Order to be filled at higher prices than last previously quoted or charged without prior written authority from the Office of Purchasing.
- 5 If requested, the Contractor shall acknowledge the order promptly and provide a delivery date.
- 6 Invoices must show Delivery Address and Purchase Order number, and indicate if it represents partial or complete billing. Separate invoices must be rendered for each Purchase Order. Invoices shall include the following information:
 - 6.1 Contractor's name;
 - 6.2 Address;
 - 6.3 Federal tax identification number;
 - 6.4 Contract number, if applicable (the first two digits are 44XXXXXXXX);
 - 6.5 Purchase Order number (the first digit is 2XXXXXXXX);
 - 6.6 Contract line number, if applicable;
 - 6.7 Unit price and extended price (if applicable, the unit price must match a line on the Contract); and
 - 6.8 Description of goods provided and/or services performed.
- 7 The County has the right to refuse to make payment on any invoice unless and until verification of receipt by the County can be determined. The County's payment for any material shall not constitute acceptance of the material or a waiver of any of the County's rights.
- 8 No freight/delivery/fuel charges will be paid by the County unless specifically provided for in the Purchase Order.
- 9 The County will not pay for packaging, boxing or cartage. Damage resulting from improperly packaged material will be charged to the Contractor.
- 10 The County reserves the right to cancel this Purchase Order or, any part thereof, without obligation, if delivery is not made or services completed at the time(s) specified.
- 11 This Purchase Order shall be governed and construed in accordance with the law of the State of Maryland without regard to any choice of law principles.
- 12 All deliveries and services furnished under this Purchase Order must be of the quality specified or in the event no quality is specified, must be the best of their respective kinds, and will be subject to inspection and approval of the County within a reasonable time after delivery of goods or completion of services. When manufacturing specifications are referred to in this Purchase Order, such specifications shall be deemed to be an integral part hereof as if duly set out herein. Goods and services shall be replaced at no additional charge to the County if they prove to be defective and/or not in accordance with specifications. Rejected materials shall be returned at the risk and expense of the Contractor. If the County does not desire replacement, the Contractor shall issue a full credit.
- 13 Requirement as to Materials, Contractor's Responsibilities and Warranties:
 - 13.1 The Contractor warrants and agrees that all materials supplied hereunder shall be manufactured and produced in compliance with the laws, regulations, codes, terms, standards and/or requirements of all Federal, State and local authorities and all other authorities having jurisdiction, and that performance of this Purchase Order shall be in accordance with the above laws, regulations, codes, terms, standards, and/or requirements, and agrees, upon request, to furnish the County a certificate of compliance in such forms as the County may require.
 - 13.2 The Contractor warrants that there has been no violation of copyrights or patent rights in manufacturing, producing, or selling the goods shipped or ordered and Contractor agrees to indemnify and hold the County harmless from any and all liability, loss or expense occasioned by such a violation.
- 14 The quantity of materials, and/or services, must not be exceeded without prior written authority from the Office of Purchasing.
- 15 Substitutions are not allowed without prior written authority from the Office of Purchasing.

- 16 If required, a sufficient number of shop drawings and/or catalog data shall be furnished to the County within 15 days (unless otherwise specified) for necessary approval.
- 17 In the event any article sold and delivered hereunder shall be defective in any respect whatsoever, the Contractor will indemnify and save harmless the County from all losses or expenses by reason of all accidents, injuries or damages to persons or property resulting from the use of such article or which are contributed to by said defective condition.
- 18 The Contractor shall indemnify and hold harmless the County, its employees, agents and officials from any and all claims, losses or expenses resulting from any accidents, injuries or damages to persons or properties, suits or demands including reasonable attorney fees which may be made against the County, its employees, agents or officials resulting from any act or omission committed in the performance of the duties imposed by and performed under the terms of this Purchase Order by the Contractor or anyone under agreement with the Contractor to perform duties under this Purchase Order. The Contractor shall not be responsible for acts of negligence or willful misconduct committed by the County, its employees, agents and officials. Any property or work to be provided by the Contractor under this Purchase Order will remain at the Contractor's risk until written acceptance by the County; and the Contractor will replace, at the Contractor's expense, all property or work damaged or destroyed by any cause whatsoever.
- 19 Liability for Damage: If this Purchase Order calls for work to be performed upon property owned or controlled by the County it is understood and agreed that:
- 19.1 Mechanic's Liens: The Contractor will keep the premises and work free and clear of all mechanic's liens, and furnish the County certificate and waiver as provided by law.
- 19.2 Property and Casualty Losses: The work will remain at the Contractor's risk prior to written acceptance by the County and the Contractor will replace at its own expense all work damaged or destroyed by fire, force or violence of the elements or any cause whatsoever.
- 19.3 Injury to Contractor's Personnel: The Contractor understands and agrees that they are the sole employer of all persons employed by Contractor to perform services under this Purchase Order and agrees on behalf of itself and its workers' compensation insurer that the County is not a dual employer of such personnel. If Contractor is hiring independent contractors or subcontractors to perform services under this Purchase Order, Contractor shall assure that all such persons are properly covered under Maryland workers' compensation law and will indemnify, save harmless and defend the County from all workers' compensation claims filed by such persons against the County.
- 19.4 Workers' Compensation Insurance: During the term of this Purchase Order, the Contractor will provide workers' compensation insurance in compliance with Maryland law for its employees and shall be responsible to verify workers' compensation coverage for all independent contractors and subcontractors. Contractor shall indemnify the County for any uninsured losses relating to contractual services under this Purchase Order and subsequent amendments.
- 20 Bankruptcy: In the event of any proceedings, voluntary or involuntary, in bankruptcy or insolvency by or against the Contractor including any proceedings under the Chandler Act, or in the event of the appointment, with or without the Contractor's consent, of an assignee for the benefit of creditors or of a receiver then the County shall be entitled to cancel any unfilled part of this Purchase Order without any liability whatsoever.
- 21 Equal Employment Opportunity: The County requires that the Contractor not discriminate against any employee or applicant for employment because of race, creed, religion, physical or mental handicap, color, sex, national origin, age, occupation, marital status, political expression, gender identity/expression, sexual orientation or personal appearance. The Contractor will take affirmative action to ensure that applicants are employed, and the employees are treated fairly and equally during employment with regard to the above. The Contractor warrants that, within the previous 12 months, it has not engaged in unlawful employment practices as set forth in Section 12.208 of the Howard County Code, Section 19 of Article 49B of the annotated Code of Maryland or Sections 703 and 704 of Title VII of the Civil Rights Act of 1964.
- 22 Material Safety Data Sheet (MSDS): If the work to be performed under this Purchase Order requires the use of any product that contains any ingredient that could be hazardous or injurious to a person's health, a MSDS must be provided to the Office of Purchasing, 6751 Columbia Gateway Drive, Suite 501, Columbia, Maryland 21046.
- 23 Termination
- 23.1 Termination for Convenience: The County may terminate this Purchase Order, in whole or in part, if the County determines that such termination is in the best interest of the County, without showing cause, upon giving at least 30 days written notice to the Contractor. The County shall pay all reasonable costs incurred by the Contractor up to the date of termination. However, in no event shall the Contractor be paid an amount which exceeds the price bid for the work performed. The Contractor shall not be reimbursed for any profits which may have been anticipated but which have not been earned up to the date of termination.
- 23.2 Termination for Default: When the Contractor has not performed or has unsatisfactorily performed one or more material terms of the Purchase Order, the County may terminate the Purchase Order for default. Upon termination for default, payment may be withheld at the discretion of the County. Failure on the part of the Contractor to fulfill the contractual obligations shall be considered just cause for termination of the Purchase Order. If the damages exceed the undisbursed sums available for compensation, the County shall not be obligated to make any further disbursements hereunder. The Contractor will be paid for work satisfactorily performed prior to termination less any excess costs incurred by the County in reprocurring and completing the work.

SECTION C

GENERAL CONDITIONS

1 DEFINITIONS:

- 1.1 Addenda – Formal alteration of a solicitation or Agreement in writing (When applicable, Addenda are available on the Office of Purchasing website.)
- 1.2 Alternate Bids – A second bid for a single item that intentionally offers a substitute product or service that varies from the stated specifications
- 1.3 Buyer – The County’s Purchasing Representative for the resulting Agreement
- 1.4 Agreement – The Request for Proposal documents and any addenda, the Contractor’s response to this solicitation, and subsequent Purchase Orders
- 1.5 County – Howard County, Maryland
- 1.6 County Purchasing Agent – The Chief Administrative Officer for the County
- 1.7 Contractor – Any offeror; most often the successful offeror
- 1.8 Designee – Specifically appointed alternate signatory or decision maker
- 1.9 Equal Business Opportunity (EBO) – The County’s minority business enterprise program
- 1.10 Issuing Office – The Howard County Office of Purchasing
- 1.11 Offeror – Any entity that submits a response to this solicitation
- 1.12 Proposal – All information submitted by the Contractor in response to this solicitation
- 1.13 Purchase Order – The document by which the Contractor receives formal notification to perform work or deliver goods
- 1.14 Request for Proposal (RFP) – All documents identified in the Table of Contents, including any addenda
- 1.15 Solicitation – The Request for Proposal
- 1.16 User Agency – County department or office for which goods and/or services are being purchased

2 BID DEPOSIT:

- 2.1 When deemed necessary, a bid deposit may be required. This requirement is described in Section E of this solicitation. Such bid deposits shall be in the amount deemed adequate by the County. The deposit shall be a certified check, cashier’s check, or treasurer’s check drawn upon a solvent clearing house bank, or a bid bond issued by an insurance company licensed to do business in Maryland made payable to Director of Finance, Howard County, Maryland. A combination of certified check and bid bonds is not an acceptable response to the bid deposit requirement.
- 2.2 Bid deposits in the form of certified checks will be returned to the unsuccessful bidders upon the award of the Agreement(s), and to the successful bidder(s) upon execution of the Agreement(s) and the meeting of bond requirements, if applicable.
- 2.3 The successful bidder's failure to execute the Agreement or meet bond requirements within ten working days after the award shall result in the deposit being forfeited to the County as liquidated damages.

3 PERFORMANCE BOND: A performance bond for 100% of the bid amount shall be required of the Contractor within ten days after award notification. The bond shall be issued by a surety company licensed to do business in Maryland.

4 RESERVATIONS:

- 4.1 The County Purchasing Agent or Designee reserves the right to reject any or all proposals or parts of proposals when, in the County Purchasing Agent's or Designee’s reasoned judgment, the public interest will be served thereby.
- 4.2 The County Purchasing Agent or Designee, with the approval of the County Executive, may waive formalities or technicalities in proposals as the interest of the County may require.

- 4.3 The County Purchasing Agent or Designee reserves the right to increase or decrease the quantities to be purchased at the prices set forth in the proposal. The quantity intended to be purchased and the period and percentage amount of any such reservation will be stated in the solicitation.
- 4.4 The County Purchasing Agent or Designee reserves the right to award Agreements or place orders on a lump sum or individual item basis, or such combination as shall, in the County Purchasing Agent's or Designee's judgment, be in the best interest of the County.
- 4.5 The County Purchasing Agent or Designee may waive minor differences in specifications provided these differences do not violate the specification intent nor materially affect the operation for which the item or items are being purchased, nor increase estimated maintenance and repair cost to the County.
- 4.6 The County Purchasing Agent or Designee may reject any proposal which shows any omission, irregularity, alteration of forms, additions not called for, conditional or unconditional unresponsiveness, or proposals obviously unbalanced.
- 5 **COMPETITION:** The name of any manufacturer, trade name, or manufacturer or vendor catalog number mentioned in this solicitation is for the purpose of designating a minimum standard of quality and type. Such references are not intended to be restrictive. Bids will be considered for any brand that meets or exceeds the quality of the specifications unless otherwise stated in the solicitation.
- A Contractor may offer only one price on each item. Submission by a single Contractor of more than one price for a single item shall be sufficient cause for rejection of all prices for that item submitted by the Contractor. Alternate bids are prohibited and will be rejected.
- 6 **PERIOD OF VALIDITY:** Unless otherwise specified, all formal proposals submitted shall be irrevocable for 120 days following the proposal opening date, unless the Contractor, upon request of the County Purchasing Agent or Designee, agrees to an extension. Bids may not be withdrawn during this period.
- 7 **DELIVERY:**
- 7.1 Contractors shall guarantee delivery of supplies in accordance with such delivery schedule as may be provided in the solicitation.
- 7.2 All items shall be delivered F.O.B. Destination, Inside Delivery, and delivery costs and charges included in the price offered, unless otherwise stated in the solicitation.
- 7.3 The County Purchasing Agent or Designee reserves the right to charge the Contractor for each day the supplies or services are not delivered in accordance with the delivery schedule. The per diem charge may be invoked at the discretion of the County Purchasing Agent or Designee and said sum to be taken as liquidated damages and deducted from the final payment, or charged back to the Contractor.
- 7.4 The County Purchasing Agent or Designee reserves the right to procure the supplies/services elsewhere on the open market if delivery is not made as specified, in which event, the extra cost of procuring the supplies/services may be charged against the Contractor and deducted from any monies due or which may become due.
- 8 **GOVERNING LAW:**
- 8.1 This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland without regard to any choice of law principles that would dictate the laws of any other jurisdiction. The parties agree that the exclusive venue for any and all actions related hereto shall be the appropriate Federal or State court located within the State of Maryland.
- 8.2 The laws of Maryland and Howard County shall govern the resolution of any issue arising in connection with the contract, including, but not limited to, all questions on the validity of the contract, the capacity of the parties to enter therein, any modification or amendment thereto, and the rights and obligations of the parties hereunder.

- 9 **PROTEST:** Any protest concerning the award of an Agreement shall be decided by the County. Protests shall be made in writing to the Issuing Office and shall be filed within ten days of issuance of award notification. A protest is considered filed when received by the Issuing Office. The written protest shall include the name and address of the protestor, identification of the procurement, a statement of the specific reason for the protest and supporting exhibits. The Issuing Office will respond to the written protest within ten days. The County's decision is final.
- 10 **DISPUTES:** In cases of disputes as to whether or not an item or service quoted or delivered meets specifications, the decision of the County Purchasing Agent or Designee shall be final and binding on all parties. All other disputes arising under or related to the Agreement will be resolved, to the extent possible, by negotiation and settlement between the parties. Pending resolution, the Contractor shall proceed diligently with performance of the Agreement unless otherwise directed in writing.
- 11 **AUTHORITY:** Solicitations are issued pursuant and subject to the provisions of Article VIII, Howard County Charter; Sections 4.100 through 4.123, Howard County Code, 2003; and the rules and regulations as prescribed by the County.
- 12 **CASH DISCOUNTS:** If applicable, cash discounts will be taken into consideration in determining the award. However, an offer of a cash discount must allow a reasonable period of not less than 30 days in order to be included in evaluation of proposal pricing. A proposal offering a cash discount in a period of less than 30 days will be evaluated as a proposal without a cash discount offer. If the Contractor obtains an award by reason of their gross price, the County will hold the offer of a cash discount and make every effort to obtain such discount.
- 13 **UNIT PRICES:** Unless the Contractor clearly shows that it is the intent that a reduced total price is being offered on the basis of receiving an award of all items covered by the total, any totals should be the actual sum of the extension of unit prices. Otherwise, in the event of any discrepancy between a unit price(s), extended price(s), and/or total price(s), unit prices will govern and the bid will be refigured accordingly.
- 14 **NON-WAIVER:** Any waiver of any breach of covenants herein contained to be kept and performed by the Contractor shall not be deemed or considered as a continuing waiver and shall not operate to bar or prevent the County from declaring a forfeiture for any succeeding breach either of the same condition of covenant or otherwise.
- 15 **PATENTS:** If applicable, the Contractor shall defend any suit or proceeding brought against the County so far as based on a claim on any equipment, or on any part thereof, furnished under this Agreement which constitutes an infringement of any patent of the United States, if notified promptly in writing and given authority, information and assistance (at the Contractor's expense) for the defense of same, and the Contractor shall pay all damages and costs awarded therein against the County. In case said equipment or any part thereof, in such suit is held to constitute infringement and the use of said equipment or part if enjoined, the Contractor shall, at its own expense, either procure for the County the right to continue using said equipment or part, or replace same with non-infringing equipment or part, or modify so that it becomes non-infringing.
- 16 **MARYLAND REGISTRATION:** Contractors must be registered to do business in, and must be in good standing in, the State of Maryland. Contractors not registered must obtain registration information from the Maryland Department of Assessments and Taxation website at: www.dat.state.md.us/ or by calling 410-767-1184 or Toll Free 888-246-5941.
- 17 **AVAILABILITY OF FUNDS:** The contractual obligation of the County under this Agreement is contingent upon the availability of appropriated funds from which payment for this Agreement can be made.
- 18 **INTEGRATION AND MODIFICATION:** This solicitation, the Contractor's response to this solicitation, subsequent Purchase Order(s), and, if applicable, the legal Agreement represents the entire understanding between the parties. Any additions or modifications shall only be made in writing and executed by both parties.
- 19 **NON-ASSIGNMENT OF AGREEMENT:** Neither the County nor the Contractor shall assign, sublet or transfer its interest or obligations under the resulting Agreement to any third party, without the written consent of the other. Nothing herein shall be construed to create any personal or individual liability upon

any employee, officer or elected official of the County, nor shall the resulting Agreement be construed to create any rights hereunder in any person or entity other than the parties to this Agreement.

20 AGREEMENT:

20.1 The County and Contractor must execute an Agreement resulting from the award of this solicitation. This process typically takes approximately three weeks from the date the successful Contractor is identified. In order to expedite this process, a sample Agreement is attached for review as part of this solicitation. Exceptions, if any, to the County's Agreement (Exhibit I) must be noted in the proposal to be considered during evaluation. Exceptions to the County's Agreement may result in rejection of the proposal.

20.2 Do not fill in or sign the sample Agreement attached as Exhibit I. The County will prepare an Agreement specific to this solicitation for execution by the successful Contractor.

21 PUBLIC INFORMATION/PROPRIETARY/CONFIDENTIAL INFORMATION:

21.1 The County operates under a public information law, which permits access to most records and documents.

21.2 Proposals will be available for public inspection after the award announcement, except to the extent that a Contractor designates trade secrets or other proprietary data to be confidential. Material designated as confidential must be readily separable from the remainder of the proposal to facilitate public inspection of the nonconfidential portion of the proposal. A Contractor's designation of material as confidential will not necessarily be conclusive, and the Contractor may be required to provide justification why such material should not be disclosed, on request, under the Maryland Access to Public Records Act, State Government Article, Sections 10-611 through 10-628, of the Annotated Code of Maryland.

22 COOPERATIVE PURCHASE:

22.1 The County reserves the right to extend all of the terms, conditions, specifications, and unit or other prices of any Agreement resulting from this solicitation to any and all public bodies, subdivisions, schools districts, community colleges, colleges, and universities including non-public schools. This is conditioned upon mutual agreement of all parties pursuant to special requirements, which may be appended thereto. The Contractor agrees to notify the issuing body of those entities that wish to use any Agreement resulting from this solicitation and will also provide usage information, which may be requested.

22.2 The County assumes no authority, liability or obligation, on behalf of any other public or non-public entity that may use any Agreement resulting from this solicitation. All purchases and payment transactions will be made directly between the Contractor and the requesting entity. Any exceptions to this requirement must be specifically noted in the bid response.

23 AWARD NOTIFICATION:

23.1 Award notification will be by U.S. Mail, e-mail or fax or a combination thereof.

23.2 The awarded Contractor(s) will be required to return an Insurance Certificate naming "Howard County, Maryland, its officials, employees, agents and volunteers" as Certificate Holder and as Additional Insured, the executed Agreement* the completed EBO Schedule of Participation and a Maryland Registration Certificate of Good Standing.

*** As Offerors have had an opportunity to note Exceptions to the Agreement with their proposal submission, it is anticipated that execution of the Agreement will require minimal time. PLEASE BE SURE TO READ THE SAMPLE AGREEMENT, EXHIBIT I. PRIOR TO SUBMISSION OF YOUR PROPOSAL.**

24 TERMINATION:

- 24.1 Termination for Convenience: The County may terminate this contract, in whole or in part, if the County determines that such termination is in the best interest of the County, without showing cause, upon giving at least 30 days written notice to the Contractor. The County shall pay all reasonable costs incurred by the Contractor up to the date of termination. However, in no event shall the Contractor be paid an amount which exceeds the price bid for the work performed. The Contractor shall not be reimbursed for any profits which may have been anticipated but which have not been earned up to the date of termination.
- 24.2 Termination for Default: When the Contractor has not performed or has unsatisfactorily performed one or more material terms of the contract, the County may terminate the Purchase Order for default. Upon termination for default, payment may be withheld at the discretion of the County. Failure on the part of the Contractor to fulfill the contractual obligations shall be considered just cause for termination of the contract. If the damages exceed the undisbursed sums available for compensation, the County shall not be obligated to make any further disbursements hereunder. The Contractor will be paid for work satisfactorily performed prior to termination less any excess costs incurred by the County in reprocurring and completing the work.

SECTION D

SPECIFICATIONS

1 BACKGROUND:

This project consists of upgrades to controls and management processing equipment for two groundwater remediation systems located at two landfill sites in Howard County. The Contractor shall complete all work described in this Request for Proposal and provide all labor, services, tools, machinery, equipment, and material necessary to successfully complete the project. Each existing system consists of a network of groundwater recovery wells with pumps to remove contaminated groundwater for treatment, which is managed with an automated control system. There are 22 recovery wells at Alpha Ridge landfill and 14 recovery wells at Carrs Mill landfill. Control panels at each well communicate to an automated control system housed in the Groundwater Building at each site. The existing automated control system consists of an outdated Allen-Bradley Programmable Logic Controller (PLC) that consists of 3 scanners, 2 inputs, 2 outputs, 2 analog inputs, a power supply rack, a security alarm system, and an auto dialer for external communication. In addition, the automated control system includes a voice auto-dialer to communicate alarms, an operator interface terminal to manage and manipulate the PLC, a desktop computer with software interface to the PLC and data storage, and reporting software for data output.

2 **STATEMENT OF WORK:** Howard County, Maryland, (the “County”), seeks a qualified firm (the “Contractor”), to furnish Groundwater remediation system hardware and software modernization services as detailed in specification Section J.

3 **PRE-PROPOSAL CONFERENCE:**

3.1 A pre-proposal conference will be held in the Alpha Ridge Landfill, 2350 Marriottsville Road, Marriottsville, MD 21104 on the date and time specified in Section A to discuss objectives and answer questions relating to this solicitation. Contractor’s attendance is not required but is strongly encouraged. Additionally, attendance may facilitate the Contractor’s understanding and ability to meet the County’s Equal Business Opportunity goals as outlined in Section H.

3.2 It is recommended that Contractors read the solicitation prior to attending the conference and bring a copy of the solicitation to the conference.

3.3 In order to assure adequate seating at the pre-proposal conference, please confirm attendance by emailing Alex Shaw at ashaw@howardcountymd.gov and referencing this solicitation and number.

3.4 If there is a need for language interpretation and/or other special accommodations, please advise Alex Shaw at ashaw@howardcountymd.gov so that reasonable efforts may be made to provide special accommodations.

4 **SITE VISIT:** Each Contractor shall completely satisfy themselves as to the exact nature and existing conditions of the Groundwater Remediation System Hardware/Software Modernization Project at the Alpha Ridge and Carrs Mill Landfill Sites and requirements of the specifications for the extent and quality of the work to be performed. Failure to do so shall not relieve the Contractor of its obligation to carry out the provisions of the Agreement.

5 **INQUIRIES AND ADDENDA:**

5.1 The Buyer in the Issuing Office is the sole point of contact for this solicitation. Questions must be addressed in writing to the Buyer and delivered no later than 10 days prior to the bid opening.

5.2 Addenda to solicitations often occur prior to the proposal opening, sometimes within a few hours of the opening. It is the potential Contractor’s responsibility to visit the Office of Purchasing website at www.howardcountymd.gov/departments/county-administration/purchasing to obtain Addenda. Addenda, when issued, must be acknowledged in the proposal by signing and returning all addenda with the proposal. Addenda must also be acknowledged in the space provided on the Technical Proposal Page No. 2.

6 CONTRACTOR'S QUALIFICATIONS:

- 6.1 Contractors must be engaged in System Integration Services, specifically for pollution control and must have been actively engaged in System Integration Services for a period of no less than five years. The experience of owner(s) may be imputed to a newly formed company/contractor provided the owner(s) has/have at least five years of demonstrated experience of reliability and meets the criteria set forth herein.
- 6.2 The County reserves the right to inspect the Contractor's equipment and to perform such investigations as may be deemed necessary to ensure that competent personnel and management will be utilized in the performance of the Agreement.
- 6.3 In accordance with Howard County Code Sec. 4.117 (a) (4), the quality of performance of previous contracts or services shall be considered in determining the award. Quality of performance may be determined through contracts or services provided to the County or to other entities. Quality of performance to other entities will be determined from reference checks when references are required. The determination of quality performance includes the Contractor's history of reasonable and cooperative behavior, commitment to customer satisfaction, and the Contractor's businesslike concern for the interests of the customer. The County reserves the right to reject any bid deemed not responsible or non-responsive.

7 AGREEMENT PERIOD: The Agreement period shall be for one year commencing on or about November 1, 2017 after approval and proper execution of the Agreement documents, with a renewal option for four additional years in one-year increments, exercisable at the sole discretion of the County.

8 ESTIMATED ANNUAL CONTRACT VALUE: The estimated annual contract value group for this contract is E as defined by the schedule below:

- A - \$30,000 to \$75,000
- B - \$75,001 to \$100,000
- C - \$100,001 to \$250,000
- D - 250,001 to \$500,000
- E - \$500,001 to \$1,000,000**
- F - Over \$1,000,000

9 PRICE ADJUSTMENT:

- 9.1 Prices offered shall be firm against any increase for one year from the effective date of the Agreement. Prior to the commencement of subsequent renewal periods, it shall be the Contractor's responsibility to notify the Issuing Office in advance of any requested price changes.
- 9.2 Requests for price adjustments shall be submitted to the Issuing Office, not the User Agency.
- 9.3 The County will entertain requests for escalation in accordance with the current Consumer Price Index at the time of the request or up to a maximum 5% increase on the current pricing, whichever is lower. *(For purposes of this section, "Consumer Price Index" shall be the Consumer Price Index-All Urban Consumers (CPI-U), Washington-Baltimore, DC-MD-VA-WV, All Items, Not Seasonally Adjusted, as published by the United States Department of Labor, Bureau of Labor Statistics.)* The County reserves the right to grant or deny the request for a price increase and will do so in writing. If the price increase is granted, the price increase will be effective upon written approval and will remain firm through the renewal period.
- 9.4 If a price increase is requested following Agreement renewal and it has been longer than one year since the last increase, the County may entertain a request for escalation if it is in the County's best interest. If the price increase is granted, the price increase will be effective upon approval and will remain firm through the renewal period, or for one year, at the County's sole discretion.

10 EXCLUSIVITY:

- 10.1 The County is obligated during the period stipulated to purchase all of its normal requirements from the Contractor and the Contractor shall be obligated to furnish the goods and/or services as stated.
- 10.2 Should a need arise for supplies or services which are not available in the timeframe required by the County, the County reserves the right to secure services from other sources to meet its immediate needs without prejudice of the Agreement.
- 11 ESTIMATED QUANTITIES: The estimated annual quantities stated are provided as a general guide for bidding and are not guaranteed. Actual quantities may be more or less than those estimated.
- 12 INSURANCE: The Contractor will be required to purchase and maintain during the life of the Agreement, including any subsequent renewal terms, Commercial General Liability Insurance, Automobile Liability Insurance, and Worker's Compensation Insurance with limits of not less than those set forth below:
- 12.1 Commercial General Liability Insurance: Combined Single Liability limits of \$1,000,000 each occurrence and \$1,000,000 aggregate naming, "Howard County, Maryland, its officials, employees, agents and volunteers" as the Certificate Holder and an Additional Insured.
- 12.2 Automobile Liability Insurance: Combined Single Liability limit of \$1,000,000 any one accident.
- 12.3 Worker's Compensation Insurance: Statutory coverage for Maryland jurisdiction, including Employer's Liability coverage, with a limit of at least \$100,000.
- 12.4 The Contractor shall assure that all subcontractors or independent contractors performing services in accordance with this solicitation carry identical insurance coverage as required of the Contractor, either individually or as an Additional Insured on the policies of the Contractor. Exceptions may be made only with the approval of the County. The Contractor shall indemnify the County for any uninsured losses relating to contractual services involving subcontractors, including workers' compensation claims.
- 12.5 The Contractor shall provide the County with Certificates of Insurance within ten days of bid award notification, evidencing the coverages required above. Such certificates shall provide that the County be given at least 60 days prior written notice of any cancellation of, intention to not renew, or material change in such coverage. The Contractor must provide Certificates of Insurance before commencing work in connection with the Agreement. "Howard County, Maryland, its officials, employees, agents and volunteers" as Certificate Holder and as Additional Insured must be shown on the certificate.
- 12.6 The providing of any insurance required herein does not relieve the Contractor of any of the responsibilities or obligations assumed by the Contractor in the Agreement awarded or for which the Contractor may be liable by law or otherwise.
- 12.7 Failure to provide and continue to enforce such insurance as required above shall be deemed a material breach of the Agreement and shall operate as an immediate termination thereof.
- 12.8 Failure to comply with this requirement at any time during the initial term and any subsequent renewals may be sufficient cause for termination for default.
- 13 METHOD OF ORDERING:
- 13.1 Purchase Orders will be issued from time to time for such quantities as may be required by the County. Purchase Orders issued against the Agreement, even if not completed within the term of the Agreement, shall continue to be bound by the terms and conditions until completion.
- 13.2 Small purchases may also be made by the County's procurement card (currently Visa). The Contractor agrees to accept the card for such quantities as may be required by the County. Contractors are prohibited from charging additional fees over and above their bid prices to process payments on procurement cards.

14 EVALUATION OF OFFERS:

- 14.1 The County intends to make award to the responsible Contractor whose proposal represents the best value to the County. Proposals will be evaluated in two phases; the first based on the technical and price submittals and the second on the oral discussions.
- 14.2 The first phase will be evaluated based on the following criteria listed in order of importance:
- 14.2.1 Overall experience and technical competence of the firm in performing System Integration Services, specifically in the context of the Technical contracting requirements described in this RFP.
 - 14.2.2 Qualifications, technical competence, and relevant experience of the staff proposed for this project based on résumés and other information provided, as delineated in the Technical Submittal Requirements Section of this RFP.
 - 14.2.3 Demonstrated ability to successfully complete this effort including design, fabrication, software development, installation, and commissioning per the RFP. Emphasis will be placed on Contractor's experience with SCADA system software programming as well as experience with configuring and programming PLCs for industrial processes.
 - 14.2.4 Proposed methodology and approach of the Contractor to successfully complete this project to include the technology products proposed and the methodology for programming and integration.
 - 14.2.5 A realistic proposed schedule that identifies major tasks and their duration along with resources to be committed to each major task. How unforeseen delays in progress will be overcome and how the bidder will ensure that project schedule requirements and constraints will be met.
 - 14.2.6 Description of risks identified by the Contractor that are associated with this project and a narrative of how the Contractor will take steps to manage those risks.
 - 14.2.7 Local business.
 - 14.2.8 Completeness of proposal.
 - 14.2.9 Price.
- 14.3 After identifying the short list of the most qualified Contractor(s) based on the evaluation criteria, representative(s) may be required to clarify their proposals through presentations and/or oral discussions.
- 14.4 The County may enter into negotiations with the Contractors and invite best and final offers as deemed to be in the best interest of the County. Negotiations may be in the form of face-to-face, telephone, facsimile, email or written communications, or any combination thereof, at the County's sole discretion.
- 14.5 Contractors are strongly advised not to prepare their proposal submissions based on any assumption or understanding that negotiations will take place. Contractors are advised to respond to this solicitation fully and with forthrightness at the time of submission.
- 14.6 Following the submittal of proposals, Contractors are strongly cautioned not to contact elected officials or members of the evaluation team regarding the selection process. Inappropriate efforts to lobby or influence individuals, or Contractors involved in this selection may result in dismissal from further consideration, at the County's sole discretion.

- 15 WORK SCHEDULE: The Contractor shall state as part of their technical proposal their compliance with schedule requirements delineated in Section D, Specifications, particularly total project durations and shutdown period requirements. Contractor shall provide a work start schedule and a work completion schedule from date of Agreement award notification, including shutdown period times and durations.
- 16 BILLING AND PAYMENT:
- 16.1 The Contractor shall submit separate invoices for each Purchase Order issued. Invoices shall be sent to Jeffrey Dannis, Chief Operations Division, Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514, Columbia MD 21046. Invoices in the proper form and approved by the County shall be paid by the County within 30 days of receipt. Invoices without the necessary information may be returned for correction prior to payment.
- 16.2 Each invoice shall include the following information:
- 16.2.1 Contractor's name;
 - 16.2.2 Address;
 - 16.2.3 Federal tax identification number;
 - 16.2.4 Contract number, if applicable (i.e., 44XXXXXXXXX);
 - 16.2.5 Purchase Order number (i.e., 2XXXXXXXXX);
 - 16.2.6 Contract line number;
 - 16.2.7 Unit price and extended price (unit price must match a contract line); and
 - 16.2.8 Description of goods provided and/or services performed.
- 16.3 The County reserves the right to make payments on Visa procurement cards when orders are placed using procurement cards as indicated in Method of Ordering above. Contractors are not permitted to charge the County additional fees over and above their bid prices to process payments on procurement cards.
- 16.4 The County reserves the right to make payments via electronic funds transfer (a.k.a. ACH) on Agreements for which this payment vehicle is appropriate.
- 16.5 At the request of the County Project Manager, Time Sheets signed by authorized County personnel shall accompany invoice.
- 16.6 Payment shall be made upon receipt of proper invoice from Contractor and authorized by the County.
- 16.7 All amounts, costs, or prices referred to herein pursuant to this Agreement shall be United States of America currency.
- 16.8 Please provide a sample invoice that complies with paragraph "Billing and Payment" with response. See Exhibit II for sample invoice.
- 16.9 The proper form of County invoices requires that the necessary information be included on all invoices. Invoices without the necessary information may be returned for correction prior to payment. The County reserves the right to approve invoices, in its sole discretion, and to request such detail and additional information as the County, in its discretion deems appropriate.

SECTION E

SUBMISSION REQUIREMENTS

- 1 INSTRUCTIONS:
- 1.1 All proposals must be clearly identified on the front of the envelope or top of the carton with the solicitation number, title of the solicitation and the due date and time. TECHNICAL AND PRICE PROPOSALS SHALL BE IN SEPARATE, SEALED ENVELOPES.
 - 1.2 All proposals must be signed by an authorized officer or agent of the Contractor submitting the proposal and delivered in sealed envelopes or cartons to the Issuing Office prior to the time and date indicated. Proposals received after the time and date indicated will not be accepted or considered.
 - 1.3 The submission of a proposal shall be considered an agreement to all the terms, conditions, and specifications provided herein and in the various bid documents, unless specifically noted otherwise in the proposal.
 - 1.4 Each proposal shall be accompanied by the Affidavit regarding price fixing, gratuities, bribery, and discriminatory employment practices in accordance with Section E.1.c. (3)(b) of the Howard County Purchasing Manual. When the Contractor is a corporation, a duly authorized representative of said corporation shall execute the Affidavit. The Affidavit is provided in the solicitation package.
 - 1.5 The Foreign Services Disclosure Form must accompany proposal for construction-related services, architectural services, engineering services and energy performance contract services of \$2 million or more. Section 12-111 of the Maryland State Finance and Procurement Article requires bidders to local governments to make certain disclosures regarding plans, at the time the bid is submitted, to perform any services under the contract outside the United States. When applicable, the Foreign Services Disclosure form is provided in the solicitation package.
 - 1.6 If a discrepancy in or omission from the specifications is found, or if a Contractor is in doubt as to their meaning, or feels that the specifications are discriminatory, the Contractor shall notify the Buyer in the Issuing Office in writing not later than ten days prior to the scheduled proposal opening. Exceptions taken do not obligate the County to change the specifications. The Issuing Office will notify all Contractors of any changes, additions or deletions to the specifications by Addenda posted on the Office of Purchasing web site (www.howardcountymd.gov/departments/county-administration/purchasing).
 - 1.7 The County will assume no responsibility for oral instructions or suggestions. All official correspondence in regard to the specifications shall be directed to and will be issued by the Issuing Office.
- 2 PROPOSAL DOCUMENTS: Contractors shall submit one original clearly marked, and four copies of the complete proposal, to the Issuing Office prior to the opening date and time specified in Section A. Failure to return required documents may be cause for rejection of the proposal. This solicitation requires the return of the following documents:
- 2.1 Technical Submittal
 - 2.1.1 Section F, (Technical Proposal Pages)
 - 2.1.2 Section F, (Contractor's Qualification Information)
 - 2.1.3 Section G, (Affidavit)
 - 2.1.4 Sufficient detail that demonstrates experience and knowledge of the services to be provided that minimally includes:
 - 2.1.4.1 A brief history of the firm including when organized, corporate structure, and type of ownership. Contractor must be actively involved in automation system design, fabrication and installation and must have been actively engaged in this field for a period of no less than five (5) years. The experience of the owners may be imputed to a newly formed company/contractor provided the owner(s) has/have

at least five (5) years of demonstrated experience of reliability and meets all the criteria delineated herein.

- 2.1.4.2 Provide the organizational structure through an organizational chart or other similar means.
- 2.1.4.3 The number of professional employees and support staff engaged fulltime. Provide resumes and other credentials for all engineers, programmers, technicians and managers who the Contractor proposes for this project. Credentials may be verified.
- 2.1.4.4 Provide details on the percentage of yearly revenue derived from providing System Integration services.
- 2.1.4.5 The primary contact on matters relating to the contract and the Project Manager.
- 2.1.4.6 Provide a listing of corporate resources that will be devoted to this project including test equipment, fabrication capabilities, facility size and layout.
- 2.1.4.7 Provide a narrative describing the firm's corporate capabilities to successfully complete this project including:
 - 2.1.4.7.1 Design, specifications, fabrication, software development, integration, startup/commissioning/testing and maintenance of automation control systems for managing water.
 - 2.1.4.7.2 Ability to design, construct, inspect and test all fabricated systems as well as the installation of control equipment and materials as specified.
 - 2.1.4.7.3 Corporate knowledge and experience to provide all required computer software programming necessary to implement the new control functionality as delineated in the Technical Specifications.
 - 2.1.4.7.4 Experience with design and installation of Ethernet local area networks.
 - 2.1.4.7.5 Corporate experience, five years minimum, with the installation, configuration, and programming of PC-based SCADA software. This experience must include:
 - I. At least two discrete projects using the same, or similar, SCADA system as is proposed herein. Provide references with contact information to substantiate all project experience.
 - II. Comparable projects are considered those including a minimum of five PCs on a standard local area network using the specified SCADA software, or similar, to monitor and control plant processes through programmable logic controllers.
 - III. Each system referenced must be for at least 300 points.
 - IV. Corporate experience in configuring and programming PLCs for industrial processes, such as pump stations, treatment plants, filtration systems. This experience must include:
 - a. Contractor shall have provided these services for at least two major projects in the past five years.
 - b. At least two discrete projects using the same, or similar, PLC system as is proposed herein. Provide references with contact information to substantiate all project experience.
 - c. PLC systems shall have had at least 1,000 I/O points to be of similar magnitude.

- 2.1.4.8 Methodology and approach to complete work related to the contact. Identify products and technology that is proposed, methodology for programming and integration, and steps to demonstrate how services will be provided in a cost effective manner.
- 2.1.4.9 Provide a project schedule that demonstrates the proposed technical approach will be executed according to the project schedule requirements and constraints. Identify any innovative approaches to shorten project schedule durations.
- 2.1.4.10 Identify any subcontract and teaming arrangements for any portion of the work. No effort may be subcontracted without prior written consent of the County Project Manager. All subcontractors must meet all requirements delineated in this solicitation.
- 2.1.4.11 Other information to demonstrate knowledge, skills and capabilities of the firm including any innovative approaches proposed.

2.2 Price Submittal

- 2.2.1 Section F, (Price Proposal Pages)
- 2.2.2 Section H, (Equal Business Opportunity Participation)
- 2.2.3 Section I, (Wage Requirement)

- 3 **ELECTRONIC AND HARD COPIES:** Contractors should submit a CD or flash drive containing the entire, identical hard copy of the proposal along with the hard copies required above. Additionally, it is requested that a separate version, redacted in accordance with Public Information/Proprietary/Confidential Information Section C, Paragraph 20, be added to the electronic copy.
- 4 **SAMPLE INVOICE:** Contractors are required to provide a sample invoice with the proposal response. The sample invoice shall contain the details enumerated in Section D, Paragraph 16.2.
- 5 **BID DEPOSIT:** This solicitation requires the submission of a bid deposit. Acceptable forms of a bid deposit are a certified check, cashier's check, or bid bond. The bid deposit shall be 5% of the total amount proposed, \$100,000.00 and shall be in accordance with Section C, Paragraph 2. Failure to submit a bid deposit shall be cause for rejection of the proposal.
- 6 **EXCEPTIONS:** If the Contractor cannot meet the terms, conditions and/or specifications of the solicitation, the Contractor must furnish a statement on company letterhead giving a complete description of any exceptions to the terms, conditions, and specifications. Failure to furnish the statement means that the Contractor agrees to all terms, conditions and specifications. Exceptions taken do not obligate the County to change the terms, conditions and/or specifications. Exceptions to the terms and/or conditions and/or to the County's standard Agreement may be sufficient cause for rejection of the proposal.
- 7 **SITE CONDITIONS:** The submission of a proposal shall be considered representation that the Contractor has carefully investigated all conditions which affect or may, at some future date, affect the performance of the work or services covered by the solicitation, the entire area to be serviced as described in the solicitation and that the Contractor is fully informed concerning the conditions to be encountered, character, quality and quantity of work to be performed, and equipment and materials to be furnished. The Contractor shall also be familiar with all Federal, State, and County laws, all codes and ordinances of the County which in any way affect the performance of the work, or persons engaged or employed in the work, or the materials and equipment used in the work.

SECTION F
TECHNICAL PROPOSAL COVER PAGE NO.1

TITLE: Groundwater Remediation System Hardware/Software Modernization

TO: HOWARD COUNTY OFFICE OF PURCHASING
6751 Columbia Gateway Drive, Suite 501
Columbia, MD 21046

The undersigned agrees to furnish and deliver the above goods and/or services in accordance with the specifications issued for same, and subject to all terms, conditions, and requirements in the solicitation, and in the various bid documents:

COMPANY NAME: _____

FEDERAL TAX IDENTIFICATION NO./SOCIAL SECURITY NO.: _____

ADDRESS: _____
Street City State Zip

TELEPHONE: _____ FAX: _____

EMAIL ADDRESS: _____

REPRESENTATIVE'S NAME: _____

Provide the name and title of the person with legal authority to sign on behalf of the Contractor. If the title of the individual is not "President" or "Vice President", provide verification of the signatory authority with your submittal.

NAME OF COMPANY SIGNATORY (Printed): _____

TITLE OF COMPANY SIGNATORY (Printed): _____

Howard County prefers to email Purchase Orders when possible, please provide an **EMAIL ADDRESS FOR RECEIPT OF PURCHASE ORDERS:** _____

Is the company a Minority-, Women-, or Disabled-Owned Business Enterprise? YES NO

If yes, indicate the type of minority ownership:

African American Asian American Disabled Eskimo
 Female Hispanic Native American

Is the company certified? If yes, indicate the certification(s) held:

Howard County Government MD Dept. of Transportation City of Baltimore Other

Certification Number(s) and Expiration Date(s): _____

Does the company have a written non-discrimination policy (i.e.: race, creed, religion, handicap, color, sex, national origin, age, occupation, marital status, political opinion, sexual orientation, gender identity/expression, personal appearance, familial status, source of income)? YES NO

(The County reserves the right to request such documentation, if desired, at a later date.)

Delivery Time After Receipt of Order: _____

(This delivery time will be considered in determining the award.)

Delivery Terms: F.O.B. Destination, Inside Delivery.

The company will accept Visa procurement cards: YES NO

(Contractors are not permitted to charge the County any additional fees over and above their bid prices to process payments on procurements cards.)

SECTION F

TECHNICAL PROPOSAL COVER PAGE NO.2

COMPANY NAME: _____

Payment Terms: (The payment terms shall be considered net 30 days unless otherwise indicated.) _____

Howard County is exempt from all local, state, and federal taxes, and prices stipulated by the Contractor are considered maximum and are not subject to any increase due to any taxes, or any other reason. The County’s Tax Exemption Number is 30001219.

We wish to submit a “NO BID” at this time, but request that our company remain on the Contractors list for future solicitations.

ACKNOWLEDGEMENT OF ADDENDA: The company shall identify by number and date the following addenda and agree that the prices shown in the proposal reflect all changes made by addenda. In addition to acknowledging addenda here, the actual addenda must be signed and returned with the proposal. To check for addenda go to: www.howardcountymd.gov/departments/county-administration/purchasing.

Number: _____ Date: _____ Number: _____ Date: _____
Number: _____ Date: _____ Number: _____ Date: _____

THE PERSON SIGNING THE PRICE PAGE MUST INITIAL ANY ALTERATIONS IN FIGURES IN INK.

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

SECTION F**PRICE PROPOSAL COVER PAGE NO. 1**

(Must be submitted separately from the Technical portion of the proposal)

COMPANY NAME: _____

TITLE: Groundwater Remediation System Hardware/Software ModernizationNIGP CODE/PRODUCT CODE: 925-77, Pollution Control Engineering**CARRS MILL**

ITEM NO.	COMMODITY/SERVICE DESCRIPTION	ESTIMATED ANNUAL QUANTITY	U/M	UNIT PRICE (2 Decimal Places Only*)	EXTENDED PRICE
A1	GWB ACS System Hardware	1	LS	\$_____	\$_____
A2	GWB ACS System Fabrication	1	LS	\$_____	\$_____
A3	GWB ACS System Installation Hardware Misc.	1	LS	\$_____	\$_____
A4	Vault Remote I/O Hardware	14	LS	\$_____	\$_____
A5	Vault Remote I/O Hardware Fabrication	14	LS	\$_____	\$_____
B1	ACS System Software Purchase Cost	1	LS	\$_____	\$_____
C1	ACS System Software Application Programming	_____	HR	\$_____	\$_____
D1	GWB ACS System Demo/Installation Labor	_____	HR	\$_____	\$_____
D2	Vault Remote I/O Demo/Installation Labor	_____	HR	\$_____	\$_____
E1	GWB ACS System Startup/Debug/Commission	_____	HR	\$_____	\$_____
F1	ACS System Full Testing/Acceptance	_____	HR	\$_____	\$_____
F2	ACS System Operator Training	_____	HR	\$_____	\$_____
G1	Spare Part Per Section 01000	_____	LM	\$_____	\$_____

CARRS MILL TOTAL PROPOSAL PRICE \$_____

Important: C1-G1 Fill in Proposed Estimated Hours and Quantity, Total hours for D1, D2 and E1 MUST not exceed 21 calendar days as described in Section J, **Section 01000**. Alternate shutdown schedules will be considered if proposed by Contractor and approved by County.

* Please note that prices shall only have **TWO DECIMAL PLACES**. The County's financial system will not allow more than two decimal places, adjust responses accordingly.

SECTION F**PRICE PROPOSAL COVER PAGE NO. 2**

(Must be submitted separately from the Technical portion of the proposal)

ALPHA RIDGE

ITEM NO.	COMMODITY/SERVICE DESCRIPTION	ESTIMATED ANNUAL QUANTITY	U/M	UNIT PRICE (2 Decimal Places Only*)	EXTENDED PRICE
A1	GWB ACS System Hardware	1	LS	\$_____	\$_____
A2	GWB ACS System Fabrication	1	LS	\$_____	\$_____
A3	GWB ACS System Installation Hardware Misc.	1	LS	\$_____	\$_____
A4	Vault Remote I/O Hardware	22	LS	\$_____	\$_____
A5	Vault Remote I/O Hardware Fabrication	22	LS	\$_____	\$_____
B1	ACS System Software Purchase Cost	1	LS	\$_____	\$_____
C1	ACS System Software Application Programming	_____	HR	\$_____	\$_____
D1	GWB ACS System Demo/Installation Labor	_____	HR	\$_____	\$_____
D2	Vault Remote I/O Demo/Installation Labor	_____	HR	\$_____	\$_____
E1	GWB ACS System Startup/Debug/Commission	_____	HR	\$_____	\$_____
F1	ACS System Full Testing/Acceptance	_____	HR	\$_____	\$_____
F2	ACS System Operator Training	_____	HR	\$_____	\$_____
G1	Spare Part Per Section 01000	_____	LM	\$_____	\$_____
ALPHA RIDGE TOTAL PROPOSAL PRICE					\$_____

Important: C1-G1 Fill in Proposed Estimated Hours and Quantity, Total hours for D1, D2 and E1 MUST not exceed 21 calendar days as described in Section J, **Section 01000**.

Alternate shutdown schedules will be considered if proposed by Contractor and approved by County.

TOTAL PROPOSAL PRICE \$_____

* Please note that prices shall only have **TWO DECIMAL PLACES**. The County's financial system will not allow more than two decimal places, adjust responses accordingly.

INVOICE PROCEDURE FOR SUCCESSFUL CONTRACTORS:

In order to facilitate prompt payment, invoices must contain the above commodity and/or service descriptions and pricing. Invoices failing to contain the required line item detail, including contract line number and unit pricing, may be returned for correction. Please submit a sample invoice with the response.

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

SECTION F

CONTRACTOR'S QUALIFICATION INFORMATION

(Must be submitted with the Technical proposal)

COMPANY NAME: _____

1. References: Give name, address, and telephone number of owner or manager of three accounts for which Contractor has provided System Integration Services during the past five years.

1.1.	Account Name	Contract Completion Date
	_____	_____
	Owner/Manager	Telephone
	_____	_____
	Address	Email
	_____	_____
	_____	_____

1.2.	Account Name	Contract Completion Date
	_____	_____
	Owner/Manager	Telephone
	_____	_____
	Address	Email
	_____	_____
	_____	_____

1.3.	Account Name	Contract Completion Date
	_____	_____
	Owner/Manager	Telephone
	_____	_____
	Address	Email
	_____	_____
	_____	_____

2. The Contractor has provided the above services for ____ years. (Note: 5 year minimum)

SECTION G

AFFIDAVIT

Must be completed, signed by an officer of the company (President, CEO, Vice President, etc), and submitted with the bid.

Contractor _____

Address _____

I, _____, the undersigned, _____ of the above named
(Print Signer's Name) (Print Office Held)

Contractor does declare and affirm this _____ day of _____, _____, that I hold the aforementioned office
(Month) (Year)
in the above named Contractor and I affirm the following:

AFFIDAVIT I

The Contractor, his Agent, servants and/or employees, have not in any way colluded with anyone for and on behalf of the Contractor or themselves, to obtain information that would give the Contractor an unfair advantage over others, nor have they colluded with anyone for and on behalf of the Contractor, or themselves, to gain any favoritism in the award of the contract herein.

AFFIDAVIT II

No officer or employee of Howard County, whether elected or appointed, has in any manner whatsoever, any interest in or has received prior hereto or will receive subsequent hereto any benefit, monetary or material, or consideration from the profits or emoluments of this contract, job, work or service for the County, and that no officer or employee has accepted or received or will receive in the future a service or thing of value, directly or indirectly, upon more favorable terms than those granted to the public generally, nor has any such officer or employee of the County received or will receive, directly or indirectly, any part of any fee, commission or other compensation paid or payable to the County in connection with this contract, job, work, or service for the County, excepting, however, the receipt of dividends on corporation stock.

AFFIDAVIT III

Neither I, nor the Contractor, nor any officer, director, or partners, or any of its employees who are directly involved in obtaining contracts with Howard County have been convicted of bribery, attempted bribery, or conspiracy to bribe under the laws of any state, or of the federal government for acts of omissions committed after July 1, 1977.

AFFIDAVIT IV

Neither I, nor the Contractor, nor any of our agents, partners, or employees who are directly involved in obtaining contracts with Howard County have been convicted within the past 12 months of discrimination against any employee or applicant for employment, nor have we engaged in unlawful employment practices as set forth in Section 12.200 of the Howard County Code, or Subtitle 6 of Title 20 of the State Government Article, Annotated Code of Maryland or, of Sections 703 and 704 of Title VII of the Civil Rights Act of 1964 as amended.

AFFIDAVIT V

The Contractor:

- i. Is not currently identified on the list created by the Maryland State Board of Public Works as a person engaging in investment activities in Iran as described in Section 17-702 of the *Maryland State Finance and Procurement Article* ; or
- ii. Is not currently engaging in investment activities in Iran as described in Section 17-702 of the *Maryland State Finance and Procurement Article*.

If the person is unable to make the certification, it will provide the County, a detailed description of the Contractor's investment activities in Iran.

I do solemnly declare and affirm under the penalties of perjury that the contents of the foregoing affidavits are true and correct to the best of my knowledge, information and belief.

Signature

Printed Name

Title

Rev. 10/25/2016

SECTION H

EQUAL BUSINESS OPPORTUNITY PARTICIPATION

NOTICE TO PRIME CONTRACTORS
10% SUBCONTRACTING GOAL ON CONTRACTS
VALUED AT \$50,000 OR MORE

Howard County Code Section 4.122 established an Equal Business Opportunity program to foster overall equity and fairness to all citizens in relation to business enterprises conducting business with the County.

If a contract is \$50,000 or more, the Prime Contractor shall make a good faith effort to comply with the Howard County Equal Business Opportunity (EBO) program's 10% subcontracting goal. The Prime Contractor shall make a good faith effort to obtain minority subcontractor participation even if the Prime Contractor has the capability to complete the work with its own workforce. This is also applicable to Prime Contractors that are minority-owned firms. The percentage requirement may vary. Prime Contractors should submit the following completed *Equal Business Opportunity Subcontractor Participation Form* with the bid. Identify subcontractors prior to submitting the proposal. After contract award, changes in subcontractors require the written approval of the EBO Coordinator.

Possible areas of obtaining subcontracting participation include, but are not limited to, flagging services, hauling, copying and printing, and the purchase of materials used in performing the contract. Contractors may use minority, women or disabled business enterprises certified by Howard County, Maryland; the Maryland Department of Transportation; the City of Baltimore, Maryland; or another certifying entity in order to satisfy the 10% subcontracting goal. The website addresses for lists of minority businesses are:

[Howard County - Equal Business Opportunity List of Firms A-Z](http://www.mdot.state.md.us/MBE_Program/index.html)
http://www.mdot.state.md.us/MBE_Program/index.html
<http://cityservices.baltimorecity.gov/mwboo>

Contractors should submit a completed *Equal Business Opportunity Subcontractor Participation Form* with the bid identifying each certified EBO firm they intend to use on the contract. However, if the EBO Subcontractor Participation Form is not submitted with the bid, the County may request EBO subcontractor participation of the successful contractor.

Contractors failing to achieve the Equal Business Opportunity Program goal following a good faith effort to obtain participation must complete the *Equal Business Opportunity Program Request for Subcontracting Waiver* and provide documentation of its good faith attempts to obtain EBO participation. The County will determine if the efforts made satisfy a good faith attempt. A waiver will only be considered in rare contracts after a determination that the Contractor has made a good faith effort and thoroughly documented the efforts. Contractors should submit the *Equal Business Opportunity Program Request for Subcontracting Waiver* with the bid. However, if the request for waiver form is not submitted with the bid, the County may obtain the request for waiver of the successful contractor.

If the County exercises its option to renew the contract, it is expected that the EBO subcontracting goal will be met for each subsequent contract year when the contract amount is \$50,000.00 or more. Questions relating to the EBO program shall be directed to the EBO Coordinator 410-313-6370.

PRIME CONTRACTORS' COMPLIANCE OF EBO SUBCONTRACTOR
PARTICIPATION

Prime Contractors that are awarded County contracts shall maintain adequate records of EBO participation on County contracts. The County may require that prime contractors report whether or not they met the proposed EBO subcontracting goal, so that the County can track compliance of EBO participation on County contracts.

Revised 12/20/2013



**HOWARD COUNTY, MARYLAND
EQUAL BUSINESS OPPORTUNITY (EBO)
SUBCONTRACTOR PARTICIPATION FORM**

COUNTY USE ONLY

EBO APPROVAL

CONTRACT TITLE:		
SOLICITATION #	CAPITAL PROJECT #	CONTRACT / PO #
TERM:	RENEWAL #	AMOUNT \$

PRIME CONTRACTOR NAME:		
ADDRESS:		PHONE:
EBO STATUS (Y/N):	*EBO TYPE:	CERTIFYING AGENCY:
		CERTIFICATION #

PRIME CONTRACTOR SHOULD LIST ALL EBO SUBCONTRACTORS / SUBCONSULTANTS / SUPPLIERS

INSTRUCTIONS FOR COMPLETING THIS FORM

- Complete the section below identifying each certified EBO firm (Minority (MBE), Woman (WBE), and Disabled (DBE) Business Enterprises) you intend to use on this project. Attach additional sheets if more than two (2) subcontractors.
- This form represents the contractor's commitment to utilize the named EBO firms at the percentages indicated should the contract be awarded to the contractor. This form should accompany your bid or proposal.
- ***EBO Types:** AA (African American), ASA (Asian American), HIS (Hispanic American), NA (Native American), FEM (Female), DIS (Disabled)

SUBCONTRACTOR NAME:		
ADDRESS:		PHONE:
CONTACT REPRESENTATIVE:		EMAIL:
*EBO TYPE (Check One)	<input type="checkbox"/> AA	<input type="checkbox"/> ASA
	<input type="checkbox"/> HIS	<input type="checkbox"/> NA
	<input type="checkbox"/> FEM	<input type="checkbox"/> DIS
CERTIFYING AGENCY:	CERTIFICATION #	EBO PARTICIPATION %
DESCRIPTION OF WORK:		EBO PARTICIPATION \$

SUBCONTRACTOR NAME:		
ADDRESS:		PHONE:
CONTACT REPRESENTATIVE:		EMAIL:
*EBO TYPE (Check One)	<input type="checkbox"/> AA	<input type="checkbox"/> ASA
	<input type="checkbox"/> HIS	<input type="checkbox"/> NA
	<input type="checkbox"/> FEM	<input type="checkbox"/> DIS
CERTIFYING AGENCY:	CERTIFICATION #	EBO PARTICIPATION %
DESCRIPTION OF WORK:		EBO PARTICIPATION \$

 PRINTED NAME

 EMAIL

 SIGNATURE (VENDOR OFFICIAL)

 TITLE

 DATE

Revised 12/20/2013

JD

SECTION I

Information on Howard County, Maryland's Living Wage Requirement

Basics of the Howard County Living Wage Legislation

In 2007, the Howard County Council passed legislation requiring a minimum "living wage" for employees of certain contractors and subcontractors of Howard County. A Contractor that is defined as a "Covered Employer" under Howard County Code Section 4.122A shall pay each employee an hourly rate sufficient to at least equal 125% of the federal poverty guidelines for a family of four individuals calculated on the basis of a 40-hour work week for 52 weeks.

Howard County Code Sec. 4.122A applies to service contracts estimated to be over \$100,000.00 per year. The code does not apply to commodities contracts, contractors who employ fewer than 5 employees during the contract term, public entities, non-profit organizations, or contracts awarded under sole source, emergency, or expedited procedures. Other contractors may also be exempt; see the complete list of exemptions in Section 1 on the front of this form.

The living wage requirements do not apply to an employee:

- who performs no measurable work related to any contract with the County
- who participates in a government-operated or government-sponsored program that restricts the earnings of or wages paid to employees to a level below the wage required under the law
- who participates for not longer than 120 days in a calendar year in a government-operated or government-sponsored summer youth employment program
- for whom a different wage rate is expressly set in a collective bargaining agreement, or
- for whom a higher wage is required by a federal, state, or County law.

This form serves as written certification to the County of your firm's intent to comply with the County's wage requirements during this term and any subsequent renewals. A Covered Employer shall not subdivide a contract; pay an employee through a third party; or treat an employee as a subcontractor or independent Contractor to avoid the imposition of any requirement under this law. Failure to comply with this requirement at any time during the initial term and subsequent renewals may be sufficient cause for termination for default. A violation of this law is a Class A civil offense; in addition to a fine, the County may suspend or debar the violator under Howard County Code Sec. 4.117.

Current Living Wage Rate in Howard County

As of January 31, 2017, the Living Wage Rate is **\$14.78 per hour**.

How the Living Wage Rate is Calculated

The Howard County Living Wage Rate is calculated by taking 125% of the Federal Poverty Guideline for a family of 4, then using this amount to determine the hourly rate based on 40 hours/week. For example, on January 31, 2017, the Federal HHS Poverty Guideline was published as \$24,600 for a family of 4 (see <https://aspe.hhs.gov/poverty-guidelines>).

$$125\% \text{ of } \$24,600 = \$30,750.00 \quad \$30,750.00 \div 52 \text{ weeks} \div 40 \text{ hrs/week} = \mathbf{\$14.78 \text{ per hour}}$$

This hourly rate must be paid to employees (full-time or part-time) during the time the employees actually provide services to the County. The current Living Wage remains in effect until new federal poverty guidelines are published, which is usually the following January. If there is a change, the Office of Purchasing will attempt to notify all current contractors via email using the email address provided on this form. The current rate is posted on our website at www.howardcountymd.gov/purchasing. It is the contractor's responsibility to ascertain the current rate.

Since the rate is subject to change annually, you must ensure that your bid pricing is sufficient to cover the cost of any increases during the term of the contract, including subsequent renewals. All prices shall take the current wage rate, and subsequent increases in the wage rate, if any, into account and there shall be no unit price adjustment for future wage rate increases during the initial term of this agreement and any subsequent renewals thereof. Future wage rate increases are hereby defined as any new rates approved by the County that take effect after and supersede the rate shown in this solicitation.

If you have questions about the Living Wage Requirement or how to complete this form, please contact the Office of Purchasing at purchasing@howardcountymd.gov or 410-313-6370.

Howard County, Maryland Wage Rate Requirements for Service Contracts Exemption Status Subtitle 1, Howard County Code Section 4.122A(b)(2)

Prime Contr.	Sub-Contr.	Section 1: Exemptions	Check all that apply, then continue to Section 2. If none of these statements apply to your company or the Subcontractor, check the last box in this section and continue to Section 2.
--------------	------------	----------------------------------	---

- | | | | |
|--------------------------|--------------------------|---|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor employs fewer than 5 employees at any time during the contract term. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor received less than \$100,000 from the County in the most recent 12-month period prior to the start date, and will be entitled to receive less than \$100,000 from the County within the next 12-month period. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor is a nonprofit organization that has qualified for an exemption from federal income taxes under Section 501(c)(3) of the Internal Revenue Code. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor is expressly precluded from complying with Howard County Code Sec. 4.122A by the terms of any federal, state, or County law, federal or state contract or grant, and the contract falls within that preclusion. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor is a public entity. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor participates in a contract awarded under Howard County Code Secs. 4.110 (Sole Source), 4.111 (Emergency), or 4.112 (Expedited). | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contractor or Subcontractor is a regulated public utility. | |
| <input type="checkbox"/> | <input type="checkbox"/> | Contract was awarded under a cooperative procurement with another government or organization of governments. | |

Check here if none of the above statements are applicable to your company or to the Subcontractor, then continue to Section 2.

**Section 2:
Certifications**

- If you checked any exemptions in Section 1, skip this section and continue to Section 3.
- If you did not check any exemptions in Section 1, check each box in Section 2 that applies to your company, then complete Section 3 below.

I do hereby certify that I have read and understand the provisions of Section 4.122A of the Howard County Code, that I am an authorized representative of the Contractor named below, and that:

- As a "covered employer," the Contractor and all Subcontractors will comply with the County's Wage Rate Requirements for Service Contracts (Howard County Code Sec. 4.122A) and will pay all employees not exempt under the wage requirements, and who perform direct measurable work for the County, the applicable wage requirements at the time the work is performed. The Contractor will keep the records necessary to show compliance and will submit such records to the Purchasing Agent on request of the Purchasing Agent; and will publicize the requirements of this law to any employees who may be covered by the law. The Contractor's proposed pricing is sufficient to meet the current living wage rate requirements during the initial term of the agreement and any increases applicable to subsequent renewals.
- If health insurance is provided to employees**, the per employee hourly cost of the premium for health insurance to an employee who provides services to the County that appears in the bid or proposal is correct.

**Section 3:
Contact Information**

Provide your contact information in the space below, then sign and date this form and submit it with your bid.

Contractor Name _____	Vendor Federal ID Number _____
Address _____	Phone Number _____
_____	Email Address _____
Authorized Signature _____	Date _____
Print Name of Signatory _____	Title of Signatory _____

To be completed by the Buyer	Contract Title:		Buyer's Initials: JAD
	Contract #:	Contract Term:	
	Capital Project No:	Renewal #:	

SECTION J

SECTION 01000

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY OF WORK

- 1.1.1 This project consists of upgrades to controls and management processing equipment for two groundwater remediation systems located at two landfill sites in Howard County. The Contractor shall complete all work described in this Request for Proposal and providing all labor, services, tools, machinery, equipment, and material necessary to successfully complete the project.
- 1.1.2 Each existing system consists of a network of groundwater recovery wells with pumps to remove contaminated groundwater for treatment, which is managed with an automated control system. There are 22 recovery wells at Alpha Ridge landfill and 14 recovery wells at Carrs Mill landfill. Control panels at each well communicate to an automated control system housed in the Groundwater Building at each site. The existing automated control system consists of an outdated Allen-Bradley Programmable Logic Controller (PLC) that consists of three scanners, 2 inputs, 2 outputs, 2 analog inputs, a power supply rack, a security alarm system, and an auto dialer for external communication. In addition, the automated control system includes a voice auto-dialer to communicate alarms, an operator interface terminal to manage and manipulate the PLC, a desktop computer with software interface to the PLC and data storage, and reporting software for data output.
- 1.1.3 The work consists of the following items:
- 1.1.3.1 Detailed design and layout of upgrades to the PLC and each well panel for approval by the County. Includes specifying all equipment makes/models, equipment layout, software, programming,
 - 1.1.3.2 Procurement of all material and equipment identified in the contractor's bid and detailed design.
 - 1.1.3.3 Demolition of existing hardware at each well panel, installation of new hardware at each well panel.
 - 1.1.3.4 Demolition of existing hardware at Groundwater Building, installation of new hardware at Groundwater Building,
 - 1.1.3.5 System start-up and commissioning,
 - 1.1.3.6 Full system testing and acceptance, and training.

1.2 WORK SCHEDULE

- 1.2.1 The County observes a five-day workweek and the following holidays:

January 1

New Year's Day

January (3 rd Monday)	Martin Luther King Day (ARL Open)
February (3 rd Monday)	President's Day (ARL Open)
May (4 th Monday)	Memorial Day
July 4	Independence Day
September (1 st Monday)	Labor Day
November 11	Veteran's Day (ARL Open)
November (4 th Thursday)	Thanksgiving Day
December 25	Christmas Day

- 1.2.2 Alpha Ridge Landfill maintains a different operating schedule than the County Administration. The Alpha Ridge Landfill is also open on Martin Luther King, President's, and Veteran's day, while most other County functions are closed.
- 1.2.3 If any holiday occurs on Sunday, the following Monday is considered the holiday. If the holiday occurs on Saturday, the Friday immediately preceding is considered the holiday.
- 1.2.4 The landfill is open from 8:00 am through 4:00 pm, Monday through Saturday. Regular work hours for this project are between 7:00 am and 5:00 pm. Work outside those days and hours shall be approved by the County Project Manager a minimum of 96 hours in advance, unless work outside regular business hours is the result of an emergency.
- 1.2.5 In case of emergency, which may require work be completed on Sundays, holidays, or during times other those listed as regular work hours, the Contractor shall request permission of the County Project Manager.

1.3 LIQUIDATED DAMAGES

- 1.3.1 Each groundwater remediation system is required to operate in order to treat contaminated groundwater and ensure that this contamination does not pose a risk to human health or the environment. As such, Contractor's work must be coordinated and scheduled in such a fashion as to minimize groundwater remediation system downtime at each site.
- 1.3.2 Contractor will provide a detailed schedule for a maximum three-week (21 calendar days) shutdown period for each system to include the following:
- 1.3.2.1 Proposed labor that will be onsite, hours, shifts, including supervisor, electricians, technicians and program engineers for each task. Contact information for onsite supervisor must also be included.
- 1.3.2.2 A contingency plan needs to be provided to discuss the steps the Contractor will take if milestones are not met during the three-week shutdown period. This contingency plan may include dispatching additional resources to project, or altering the project work hours, order of completion of tasks, etc.
- 1.3.3 It will be the responsibility of Contractor to provide sufficient number of technicians and engineering support to meet the requirements identified for the shutdown period.
- 1.3.4 In the event that the three-week maximum shutdown period is exceeded for either system, the Contractor will incur liquidated damages at a rate of \$1,000 per calendar day until the system is accepted by the County and no longer shutdown.

- 1.3.5 In the event that Change Order work is identified during the shutdown period for either system, due account will be made for any associated increases in time to complete.

1.4 GENERAL CONDITIONS

- 1.4.1 The Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction, approved on May 07, 2007 and all subsequent amendments are hereby incorporated into this scope of work. Where reference is made herein or on any other contract document related to this project, it shall be interpreted to refer to the above Howard County Specification.
- 1.4.2 When reference is made to the General Conditions, it shall refer to the General Conditions contained in the above-referenced Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction, notwithstanding any specific instruction or detail provided in this request for proposal.

1.5 DEMOLITION

- 1.5.1 Scope: Contractor will be required to remove existing back panels from enclosures.
- 1.5.2 Contractor shall exercise care during demolition work to confine demolition operations to only those indicated in the specifications. The physical means and methods to ensure that protection are at the Contractor's discretion but shall be described in general terms in the bid submittal.
- 1.5.3 Signage, signals, barricades, and lockout/tagout procedures used shall conform to requirements of Federal, State and local laws, rules, regulations, precautions, orders and decrees.
- 1.5.4 Care needs to be taken when removing existing field wiring so that the field wires can be landed on to new back panels. Contractor will be responsible to replace any wires that they damaged during demolition phase.
- 1.5.5 Contractor will label any wires that do not currently have labels so that proper re-termination can be accomplished.
- 1.5.6 Contractor needs to mount terminal blocks on new back panels in close proximity of the existing terminal blocks so that wires can be re-terminated without having to extend the field wires. Pictures of existing back panels are available on request.
- 1.5.7 Contractor needs to protect the removed back panels and all the components on them as they are property of Howard County and are going to be used as spare parts for other sites. Removed back panels cannot be left in the weather and coordination with Howard County to take the back panels to a storage area upon removal is a must.

1.6 NAMEPLATES

- 1.6.1 All equipment installed as part of this project shall be permanently identified by name and number provided by Contractor on design drawings that must be approved by the County Project Manager or designee.
- 1.6.2 Nameplates shall be engraved by the Contractor with information described in Section 1.6.A and laminated black-on-white phenolic nameplates. Lettering shall be 2-inch high etched white.

1.7 CONTRACT DRAWINGS AND DOCUMENTS

1.7.1 The Contractor must keep one complete set of all contract drawings and documents on each project site at all times to be annotated with all changes made during the progress of the project. These documents must be available to the County Project Manager or designee as request throughout the project and must be delivered to the County Project Manager upon completion of the project. If the Contractor fails to maintain and submit these as-built documents as required herein, final payment will respect to the Contract as a whole will be withheld until proper documentation off actual work is provided. The County may, at its option, contract for independent correction of the Contract Documents, and the cost of such services shall be deducted from monies owed to the Contractor.

1.8 OPERATION AND MAINTENANCE MANUALS

1.8.1 Upon completion of the work, the Contractor shall provide for the County Project Manager's review, four sets of Operation and Maintenance Manuals for each system.

1.8.2 Manuals shall be provided for all equipment and systems provided by the Contractor. Data shall consist of catalogs, brochures, bulletins, charts, schedules, shop drawings corrected to reflect as-built conditions, wiring diagrams, and any other relevant information necessary for the County Project Manager to develop an effective operation and maintenance program and to document system configuration and operation.

1.8.3 Include, at a minimum, the following data for each site:

1.8.3.1 Title page providing the name of the facility and date of project work.

1.8.3.2 Photographic log of each piece of equipment in place.

1.8.3.3 Nameplate data for all equipment.

1.8.3.4 Performance information for all equipment.

1.8.3.5 All approved shop drawings for each approved piece of equipment installed.

1.8.3.6 Manufacturer's cut sheet and dimension drawings for each piece of equipment and details for all replacement parts.

1.8.3.7 Manufacture's operation and maintenance instructions for all equipment.

1.8.3.8 Complete as-built wiring diagrams for all individual pieces of equipment and systems. This requirement includes single-line diagram, schematic or elementary diagrams, complete point-to-point interconnection diagrams, and interconnection and terminal board identification diagrams.

1.8.3.9 Manufacturer's certifications for specified equipment.

1.8.3.10 Complete parts list with parts assembly drawing with exploded view. Names and addresses of spare parts suppliers, recommended spare parts to be kept on hand, as well as lead times required for spare parts.

- 1.8.3.11 This manual shall also include detailed written procedures to be used for all modes of operation including all precautions for personal safety or for the prevention of damage to the equipment, either electrical or mechanical. This information shall include initial start-up, interim operation when needed, normal (automatic) operation, emergency operation, system shutdown, and system restart. In addition, this manual must include details concerning required operating checks.
- 1.8.3.12 This document must also include all Ladder Logic and any other programming schematics that describes all system operation sequences.
- 1.8.3.13 Preventative maintenance measures and their frequency shall be identified in tabular form. A diagnostic troubleshooting chart shall be provided that contains symptoms, probable causes and remedies.
- 1.8.4 The manual described shall be provided on 8 ½ by 11-inch paper bound in sturdy three-ring binders with plastic-coated covers. Binders shall be high-quality, metal hinged, with rings that lock closed.
- 1.8.5 Subsequent to County Project Manager's approval of Operation and Maintenance Manuals, Contractor shall submit four complete sets of manuals for each site with all edits/clarifications addressed to the satisfaction of the County Project Manager. In addition, Contractor shall provide one electronic version of the complete Operation and Maintenance Manual for each site.
- 1.8.6 Final acceptance of this project will not be undertaken until all project documentation is accepted by the County Project Manager.

1.9 ACCEPTANCE TESTING

- 1.9.1 The Contractor shall be responsible to demonstrate at each site, proper operation of all equipment, controls, alarms, sequences, and appurtenances to the satisfaction of the County Project Manager.
- 1.9.2 The Contractor shall arrange, at contractor's expense, for any factory trained service representatives necessary for final acceptance testing at each site.
- 1.9.3 Contractor shall schedule acceptance testing with the County Project Manager a minimum of five business days in advance.
- 1.9.4 Any additional start-up and testing requirements are specified throughout the technical specifications and as recommended by specific equipment manufacturers.
- 1.9.5 The Contractor shall submit all test procedures for approval by the County Project Manager prior to testing. A final test report shall be submitted after completion of testing.
- 1.9.6 Testing will include, at a minimum, the following:
 - 1.9.6.1 All system operating parameter management and measurement.
 - 1.9.6.2 Communication failure of HMI to PLC
 - 1.9.6.3 Communication failure of well I/O rack

- 1.9.6.4 All alarms to confirm proper notification on HMI, daily report log, and call out system (text and email).
- 1.9.6.5 Automatic re-start of system after a power failure at ground water building.
- 1.9.6.6 Proper report operation by executing all of report templates to make sure all data populates reports correctly.
- 1.9.7 The Contractor shall employ all testing devices and personnel trained in their use, that are required for the testing herein. All testing devices must have valid calibration performed by a qualified independent calibration/testing agency that is certified by the testing equipment manufacturer.
- 1.9.8 Final acceptance testing shall be completed in the presence of the County Project Manager or designee.
- 1.10 **WARRANTIES**
 - 1.10.1 See section 13400 for details concerning warranties.
- 1.11 **SPARE PARTS**
 - 1.11.1 The Contractor will provide a spare parts list for each system such that the County can make repairs as needed in the event of a component failure. Since both sites are same architecture, this list includes parts for both sites and separated on pricing page. (Example: Item 1 is a quantity of two PLC processors, one for CM and one for AR).
 - 1.11.2 Following is the list of parts/quantities that must be identified by the Contractor.
 - 1.11.2.1 (Qty 2) PLC Processor
 - 1.11.2.2 (Qty 2) of each I/O module used in the system
 - 1.11.2.3 (Qty 2) of each PLC communications module used in the system
 - 1.11.2.4 (Qty 2) of each media converters used in system
 - 1.11.2.5 (Qty 2) of each patch cable (fiber and copper) used in the system
 - 1.11.2.6 (Qty 10) of each fuse used in the system
 - 1.11.2.7 (Qty 2) of each circuit breaker used in the system
 - 1.11.2.8 (Qty 4) of each of the surge suppressors used in the system
 - 1.11.2.9 (Qty 2) of motor starter/overload module used for well pumps
 - 1.11.2.10 (Qty 2) of 30A 3 pole disconnect switch and operator used in vault control panels
 - 1.11.2.11 (Qty 2) 24VDC 5A power supplies
 - 1.11.3 The Contractor shall provide a complete list of spare parts to identify all parts/systems used by

the contractor to complete the work described herein. The spare parts list shall include the part name and description, equipment that the spare part is associated with, serial number, manufacturer, manufacturer contact information.

END OF SECTION 01000

SECTION 13400
AUTOMATED CONTROL SYSTEM (ACS)

PART 1 GENERAL

1.1 SCOPE

1.1.1 The CONTRACTOR shall furnish, install, program, and place into service an Automated Control System (ACS) capable of remote monitoring and control of the groundwater remediation system as specified herein.

1.2 RELATED SECTIONS

1.2.1 Section 01000 – General Requirements

1.2.2 Section 13420 – Flow Meter Register

1.3 REFERENCES

1.3.1 National Electrical Manufacturers Association (NEMA):

1 NEMA ICS 6-1993 (R2001, R2006) Enclosures for Industrial Controls and Systems.

1.3.2 National Fire Protection Agency

2 NFPA 70, National Fire Protection Agency

1.3.3 National Electrical Code 2014 (or most-recently adopted version for Maryland)

1.4 SUBMITTALS

1.4.1 Provide submittals in accordance with the General Provisions.

1.4.2 For Design Phase of Project, CONTRACTOR must provide details for all system components, layout, design, programming, testing, and commissioning. These details must be submitted and approved by the County Project Manager prior to initiation of procurement or other tasks.

1.4.3 Product Data: Provide data for each system component. Include the manufacturer's "data sheets" for components of the ACS.

1.4.4 Project Schedule

1.4.4.1 Submit a detailed plan along with duration/coordination of each step from project initiation to project completion to include, but not limited to the following.

1.4.4.1.1 Design submission

1.4.4.1.2 Engineering phase

1.4.4.1.3 Material/equipment procurement

1.4.4.1.4 New control panel fabrication

1.4.4.1.5 Programming/HMI development

- 1.4.4.1.6 New control panel testing (at Contractors facility) prior to shipment
- 1.4.4.1.7 Installation sequence plan which will include, new equipment delivery, demolition of existing system controls, installation/termination of new PLC/HMI panels in ground water buildings, demolition of well vault controls, installation/termination of new well vault controls, software debugging and system check out, up to including having the system back online and functional. In addition, including system testing/acceptance and personnel training schedule/duration once system is operational.

1.4.5 I/O IP Address Listing

- 1.4.5.1 Submit a complete IP address listing of all new I/O drops as well as the Ethernet based I/O communication NIC at PLC in ground water building.
- 1.4.5.2 NOTE: IP address of second NIC in PLC and HMIs in ground water buildings will be provided by Howard County NTCS department at beginning of project.

1.4.6 I/O Data Base

- 1.4.6.1 Submit an I/O Database for all PLC data points.
 - 1.4.6.1.1 PLC Tag Name
 - 1.4.6.1.2 HMI Tag Name
 - 1.4.6.1.3 I/O Description
 - 1.4.6.1.4 Drawing Reference
 - 1.4.6.1.5 Source Name
 - 1.4.6.1.6 Source PLC Address
 - 1.4.6.1.7 Signal Type
 - 1.4.6.1.8 Signal Range
 - 1.4.6.1.9 Associate Alarm

1.4.7 Shop Drawings and Logic:

- 1.4.7.1 Cable schematic showing remote I/O Modules (RTU) and PLC interconnection and system configuration.
- 1.4.7.2 List connected data points for input and output devices.
- 1.4.7.3 Indicate system graphics indicating specific systems, data point addresses, and operator notations.
- 1.4.7.4 Show system configuration with peripheral devices, power supplies, diagrams and interconnections.
- 1.4.7.5 Indicate description and sequence of operation.

1.4.8 Programming

- 1.4.8.1 Submit detailed description of all proposed control equipment programming prior to delivery to the site. The submittal shall include:
- 1.4.8.1.1 A tabular list of all I/O points.
 - 1.4.8.1.2 Written functional description, including:
 - 1.4.8.1.2.1 List of the input signals, including a reference to the monitored instruments and devices.
 - 1.4.8.1.2.2 Listing of the output signals, including a reference to the controller devices
 - 1.4.8.1.2.3 Listing of status tags, such as alarm levels, reportable tags such as runtime hours, cycle counts
 - 1.4.8.1.2.4 Submit a power-on, start-up and shut-down sequence.
 - 1.4.8.1.3 Preliminary program listings
 - 1.4.8.1.4 HMI graphics/screens
 - 1.4.8.1.5 Any programming manuals or other documents required to interpret the program listings.

1.4.9 Testing Plan

- 1.4.9.1 Detailed step-by-step test procedures to demonstrate all functions and features of each component and system of the entire control system.
- 1.4.9.1.1 These test procedures shall cover all control and communication equipment and materials specified under other sections of the RFP plus any additional items required to document that complete and fully functional system has been installed.
 - 1.4.9.1.2 These test procedures shall cover any type of alarm conditions that are programmed to display on HMI and call out systems. Call out system must be tested for each of the specified call out conditions.
 - 1.4.9.1.3 Confirm proper communications between PLC programming software and PLC.
 - 1.4.9.1.4 Confirm operation of HMI development software.
 - 1.4.9.1.5 Confirm proper operation of Howard County personnel accessible call-out system configuration software for modification of call-out alarms, on-call personnel schedules and set up of text message and email functions for notifications.
- 1.4.9.2 Submit a detailed testing plan and procedure for each I/O data point and calculated value, including test forms.
- 1.4.9.3 Test forms to document completion of field tests with written procedures, expected results, spaces for entry of actual results, spaces for comments, and spaces for sign

off by the contractor and Howard County representative.

- 1.4.9.4 A final test report shall be submitted after completion of testing
- 1.4.10 Demonstration CD: Provide demonstration CD containing graphics.
- 1.4.11 Certificates: Certification of test equipment (calibration records) used to complete the work as described herein (As necessary).
- 1.4.12 Operations and Maintenance (O&M) Manual:
 - 1.4.12.1 Submit details final documentation including as-built (record) drawings, Operation and Maintenance manuals, software documentation, and other items required to fully document the system as installed and commissioned.
 - 1.4.12.1.1 The O&M manual shall include a detailed functional description and alarm section with descriptive trouble-shooting procedures for each alarm.
 - 1.4.12.1.2 Load Final copies of all programs on the HMI workstations, along with the developmental software.
 - 1.4.12.2 Include Final copies of all programs listings with annotations, comments and cross reference tag list in both hard copy printout and on USB sticks in O&M manuals.
 - 1.4.12.3 Indicate manufacturer's installation instructions for all components.
 - 1.4.12.4 Include interconnection wiring diagrams for the complete field installed systems with identified and numbered system components and devices.
 - 1.4.12.5 Include keyboard illustrations and step-by-step procedures indexed for each operator function.
 - 1.4.12.6 Include inspection frequency, cleaning methods, and cleaning materials recommended frequency of calibration. Include MSDS sheets for recommended cleaning materials.
 - 1.4.12.7 Submit in accordance with requirements in the Special Provisions.
- 1.4.13 As-Installed backup copies of all CONTRACTOR-developed applications including, but not limited to, PLC applications, HMI applications, report templates, hardware & software configurations.
- 1.4.14 Suggested spare parts inventory for each type of equipment. Include part numbers, and the name, address, and telephone number of the recommended part suppliers.
- 1.4.15 Warranty: Submit manufacturer's warranty and ensure that forms have been filled out in COUNTY's name and registered with manufacturer.
- 1.4.16 Submit qualifications of ACS manufacturer and installer as described in Article 1.5 of this Section to the COUNTY PROJECT MANAGER for review and approval.
- 1.4.17 Software & Licensing
 - 1.4.17.1 All software purchased for this project as specified in RFP, needs to be registered to

Howard County and turned over to Howard County with O&M manual submission.

- 1.4.17.1.1 Software includes installation media, licenses and any printed manuals.
 - 1.4.17.1.1.1 PLC programming and communications software
 - 1.4.17.1.1.2 HMI development, runtime and communications software including any add-on software for integration of reporting data to Howard County database
 - 1.4.17.1.1.3 Call-out system development, runtime and communications software
 - 1.4.17.1.1.4 Report generation software

1.4.18 Report Testing

- 1.4.18.1 Confirm that specified reporting data is being properly collected and stored on Howard County specified database server by executing two daily reports using the report generation software that Contractor will install on Howard County computer as part of this project. Execute one each of the longer-term reports to confirm they are functional also even though there may be insufficient data collected as system will still be new. Contractor and Howard County representative will be required to confirm these reports are working correctly and both sign off as accepted.

1.4.19 Training

- 1.4.19.1 Coordinate training to be provided by Contractor for Howard County personnel
- 1.4.19.2 All training must be coordinated with the activities of the site personnel.
- 1.4.19.3 The CONTRACTOR shall not schedule any training until it has been confirmed in writing that the proposed schedule is acceptable to the Howard County Project Manager.
 - 1.4.19.3.1 The Contractor shall submit the proposed schedule for each training topic not less than 4 weeks prior to the proposed training date.
 - 1.4.19.3.2 If the proposed dates for training are not convenient to Howard County personnel, the Contractor shall adjust the schedule accordingly.
 - 1.4.19.3.3 Note: Since both Carrs Mill and Alpha Ridge sites will have the same equipment and functionality, training needs to only be provided for one site.
- 1.4.19.4 Training items will include the following items:
 - 1.4.19.4.1 System overview with detailed explanation of operation including system start-up, shut-down, alarm evaluation, alarm clearing, alarm history, how to recover from a non-operator invoked shut-down, changing set points, manual/auto controls, how to restart HMI in the event of a system lockup (of HMI).
 - 1.4.19.4.2 Electrical overview of ground water building PLC control panel and

typical well vault control panel. Review with personnel points of power isolation in control panels, devices that can trip and how to reset them. Recommendations on any period maintenance such as testing voltages, tightening terminals, taking current readings, etc.

- 1.4.19.4.3 PLC troubleshooting overview with Howard County electrician which will demonstrate how to open the PLC programming software from HMI PC, connect to the PLC, show live programming logic and data tables to allow for basic troubleshooting of system after commissioning.
- 1.4.19.5 Call out system training with Howard County representative(s) to demonstrate how to open system software from HMI PC, edit call out points to allow personnel to enable, disable, add alarms to database, how to modify personnel list of call out individuals, modify call out schedules, set up new schedules, set up SMS text message for individuals, set up email messages for individuals.
- 1.4.19.6 Reporting software training. Train Howard County personnel how to open the reporting software from County network connected PC where reporting software has been installed. Show personnel how to connect to County database that contains the report points, retrieve data to populate Contractor provided report templates and how to save reports for filing and printing.

1.5 QUALITY CONTROL

- 1.5.1 Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section, with minimum of five (5) years documented experience.
- 1.5.2 Installer Qualifications: Company experienced and specializing in performing the work of this Section.
- 1.5.3 Manufacturing Quality Control: To centralize responsibility, it is required that all equipment provided under this Specification be obtained from a single supplier or manufacturer who shall assume full responsibility through the CONTRACTOR for the completeness, performance, adequacy and proper operation of the system in accordance with the requirements herein. The supplier shall be the source of information on all equipment furnished regardless of the manufacturing source of that equipment.

1.6 DELIVERY, STORAGE, AND HANDLING

- 1.6.1 Packaging of the system shall be in accordance with the following requirements:
 - 1.6.1.1 All items to be installed shall be wrapped and placed in suitable shipping containers with sufficient cushioning material to prevent damage during shipment and storage.
- 1.6.2 Acceptance at the Site:
 - 1.6.2.1 Products arriving at the site shall be examined for general damage during shipping. Those products found to be damaged shall not be accepted.
- 1.6.3 Storage and Protection:

- 1.6.3.1 Components shall be stored according to manufacturer's requirements for storage prior to installation.
- 1.6.3.2 In cases where specific storage requirements are not provided, components shall be stored in a clean, dry area, protected from the weather, until required for installation.

1.7 PROJECT CONDITIONS

1.7.1 Services:

- 1.7.1.1 Operating Hours: 24 hours/day, 7 days/week, 52 weeks/year.
- 1.7.1.2 Industrial design with minimum plant life of 30 years.

1.7.2 Ambient Conditions

- 1.7.2.1 Plant Location: Howard County, Maryland.
- 1.7.2.2 Plant Elevation: Approximately 530 feet above sea level.
- 1.7.2.3 Ambient Temperature Range: 32 to 140°F.
 - 1.7.2.3.1 Barometric Pressure, inches Hg absolute (mean at 70°F): 29.4.
 - 1.7.2.3.2 Relative Humidity: Varies from 5 percent to 95 percent.
- 1.7.2.4 Carrs Mill Landfill Electrical Supply: 120/240 volts, 1-phase, 60 Hz. Alpha Ridge Landfill Electrical supply: 277/480 volts, 3 phase, 60Hz, with step-down transformer in the Ground Water Building and a step-down transformer/panel combination at each vault, except the two newer well vault control panels. The two newer vault control panels are fed directly with 277/480 volt, 3-phase power (additional details in Section 2.7).

1.8 SEQUENCING AND SCHEDULING

- 1.8.1 The sequencing of work and scheduling of tasks shall follow the project schedule and milestones approved by the COUNTY PROJECT MANAGER. Acquisition/delivery of control system components shall adhere to and support the approved project schedule.
- 1.8.2 The total project duration cannot exceed 40 weeks to complete all tasks at both sites. This duration includes the 21 calendar day shutdown period for demolition and installation of new equipment at each site. As part of this project duration, the County will require 14 calendar day turnaround for all reviews, comments, approvals.

1.9 WARRANTY

1.9.1 CONTRACTOR Warranty

- 1.9.1.1 The CONTRACTOR shall submit a written guarantee that the ACS will perform the service for which it is intended and designed for a minimum of one (1) year, and should it fail to do so, will modify or replace the unit or component thereof, and/or correct defective work, at no cost to the COUNTY.

1.10 MAINTENANCE

1.10.1 Maintenance Schedule

1.10.1.1A preventive maintenance schedule shall be provided per the manufacturer's instructions. Maintenance service numbers and information shall be provided along with product documentation sent in shipping. Maintenance policies and procedures shall be fully described in the operation and maintenance documentation.

1.10.2 Extra Materials

1.10.2.1 Any extra/replacement parts or materials required to maintain acceptable product performance levels shall be referenced in the product documentation provided with shipping.

PART 2 PRODUCTS

2.1 MANUFACTURERS/SUPPLIERS

2.1.1 Programmable Logic Controller (PLC): The PLC and related hardware shall be manufactured by Allen-Bradley, 1201 South Second St., P.O. Box 2086, Milwaukee, Wisconsin 53201, phone 414-382-2000, or approved equal.

2.2 PROJECT SCOPE OVERVIEW

2.2.1 The intention of this project is to replace some aging, obsolete PLC/OIT/HMI equipment that is no longer available and/or difficult to procure. The two landfill sites, Alpha Ridge and Carrs Mill, have very similar systems which have acceptable operational sequences but need to have the outdate controls upgraded. The existing enclosures and field wiring/devices are to remain but the controls internal to the existing enclosures are to be replaced in this project. For the convenience of designing this new system, a copy of the current PLC ladder logic has been printed out to use as a reference. The logic includes the ground water building, flow calculations and typical well control logic.

2.2.2 A copy of the existing ladder logic will be made available to the CONTRACTOR selected.

2.2.3 Existing well-naming convention to be maintained by CONTRACTOR through programming and any other work on this project.

2.3 GENERAL REQUIREMENTS:

2.3.1 The ACS for each site are very similar however there are some differences and the two sites will be called out as Carrs Mill and Alpha Ridge. The ACS shall meet, but not be limited to, the following design and functional requirements:

2.4 CARRS MILL LANDFILL SYSTEM OVERVIEW

2.4.1 Local system description: The Carrs Mill landfill groundwater treatment system consists of a groundwater treatment building located at the beginning of a run of fourteen individual wells. Water is pumped from the individual wells, based on level at each well, through a common

header to the Ground Water Building. The ground water building has equipment to filter the water and then discharge the water to a nearby stream. There is a Programmable Logic Controller (PLC) and Human Machine Interface (HMI) in the ground water building that controls treatment equipment in the ground water building, instrumentation, as well as various alarm signals and also controls the individual fourteen wells using remote I/O concept. The HMI will also provide call out alarms (via text message and/or emails), data collection of specific points for regulatory report generation, PLC programming software and HMI development software. Collected data will be stored on a County-owned server with the local network. The remote I/O at each individual well will start and stop the submersible well pump, monitor water level, monitor vault conditions and provide hand-off-auto selector and pump run indicator. The COUNTY will add appropriate software to allow authorized personnel the ability to remote into this HMI PC for monitoring.

2.4.2 Remote system description: There will be remote located software (location to be determined) such as Dream Reports (or approved equal) that will retrieve stored data from COUNTY-owned data server and generate regulatory reports.

2.4.3 Communications Overview

2.4.3.1 ACS unit PLC in Groundwater Building will communicate as follows:

2.4.3.1.1 The (14) well I/O control panels will be controlled via Ethernet through a combination of fiber optic and copper Ethernet, as required. All Fiber will be installed and tested by the COUNTY prior to new system installation. CONTRACTOR will install, terminate and test all CAT6 Ethernet wiring from communication enclosure, in close proximity to well CRB-3, to each well from the previous well through existing communication conduits.

2.4.3.1.2 HMI located in ground water building PLC panel will communicate via Ethernet.

2.4.3.1.3 HMI will be accessible via secure, high speed network connection to Howard County Government network. This network connection will be provided and configured by the COUNTY.

2.5 ALPHA RIDGE LANDFILL SYSTEM OVERVIEW

2.5.1 Local system description: The Alpha Ridge landfill groundwater treatment system consists of a groundwater treatment building located at the middle of twenty-two individual wells. Water is pumped from the individual wells, based on level at each well, through a common header(s) to the Ground Water Building. The treatment building has equipment to filter the water and then discharge the water to a nearby stream. There is a Programmable Logic Controller (PLC) and Human Machine Interface (HMI) in the ground water building that controls treatment equipment in the ground water building, instrumentation, as well as various alarm signals and also controls the individual twenty-two wells using remote I/O concept. The HMI will also provide call out alarms (via text message and/or emails), data collection of specific points for regulatory report generation, PLC programming software and HMI development software. Collected data will be stored on a County owner server with the local network. The remote I/O at each individual well will start and stop the submersible well pump, monitor water level, monitor vault conditions and provides hand-off-auto selector and pump run indicator. The COUNTY will add appropriate

software to allow authorized personnel the ability to remote into this HMI PC for monitoring.

2.5.2 Remote system description: There will be remote located software (location to be determined) such as Dream Reports (or approved equal) that will retrieve stored data from County owned data server and generate regulatory reports.

2.5.3 Communications Overview

2.5.3.1 ACS unit PLC in Groundwater Building will communicate as follows:

2.5.3.1.1 The twenty-two well I/O control panels will be controlled via Ethernet through a combination of fiber optic and copper Ethernet, as required. All Fiber and/or Ethernet runs will be installed and tested by the COUNTY prior to new system installation.

2.5.3.1.2 HMI located in ground water building PLC panel will communicate via Ethernet.

2.5.3.1.3 HMI will be accessible via secure, high speed network connection to Howard County Government network. This network connection will be provided and configured by the COUNTY.

2.6 CARRS MILL LANDFILL SITE PRODUCTS

2.6.1 ACS Control Unit: Located in Ground Water Building – (see Exhibits for photos of existing system – for reference only)

2.6.1.1 Provide PLC based system to meet this specification.

2.6.1.2 PLC-based system shall be housed in existing U.L. listed enclosure.

2.6.1.3 Existing U.L. listed enclosure currently has 120 volt, 1-phase, 3-wire, AC power supply.

2.6.1.4 Minimum required components:

2.6.1.4.1 One (1) new, steel, powder coated back panel to replace existing back panel. Existing enclosure is a Hoffman C-SD483612.

2.6.1.4.2 One (1) new, steel, powder coated door skin to attach over existing door to cover existing door penetrations. Size per enclosure described in previous bullet.

2.6.1.4.3 A programmable logic controller (PLC), fully programmed and tested. The PLC system shall contain space for expansion for future controls. The PLC system will contain (2) Ethernet ports, one for remote I/O communications (Ethernet/IP or equal) and the second for communications with local HMI PC and local area network. PLC will be an Allen Bradley CompactLogix dual Ethernet series or approved equal. All I/O modules shall be 1769 series CompacLogix or approved equal.

2.6.1.4.3.1 Thirty-two (32) 120VAC discrete (on/off) inputs.

- * A/S inlet water pressure high
- * Air pressure high
- * A/S blower on
- * A/S blower OL
- * Discharge pump on
- * Discharge pump OL
- * High-high filter pressure
- * A/S high-high level
- * Building temperature low
- * Building temperature high
- * Security system (intrusion or fire)
- * High filter pressure
- * Building sump high level
- * A/S inlet water pressure high
- * A/S low air pressure
- * System reset pushbutton
- * Note: Balance of spare inputs wired to terminal blocks for future use.

2.6.1.4.3.2 Sixteen (16) 120VAC rated dry contact discrete output.

- * A/S blower motor starter
- * A/S transfer pump starter
- * Red lens, alarm, LED pilot light
- * Motorized influent valve energize open command
- * Motorized influent valve energize open green lens, LED pilot light
- * Motorized influent valve energize closed amber lens, LED pilot light
- * Motorized influent valve energize FTO red lens, LED pilot light
- * Filter bank 1 select control relay
- * Filter bank 2 select control relay

- * Alarm strobe
- * Note: Balance of spare outputs wired to terminal blocks for future use.

2.6.1.4.3.3 Eight (8) analog inputs (4-20ma rated)

- * Influent water flow rate
- * Influent water temperature
- * Building LEL

2.6.1.4.3.4 Not Balance of spare inputs wired to terminal blocks for future use.

2.6.1.4.3.5 Space for (3) additional discrete inputs, discrete outputs, and analog inputs, modules (total) as future needs dictate. Three spaces either in regular rack, or space on back panel to add three more modules in the event there is not a physical rack (Example: Compact Logix system).

2.6.1.4.4 One (1) panel mounted graphical Human Machine Interface (HMI) communicating directly to PLC. This HMI will utilize a software package such as Wonderware's Intouch ME (or approved equal) that will provide ability to meet requirements as detailed in Section 2.6.C. This will be mounted in existing control enclosure in ground water building. The HMI shall be a color touch screen and no less than 15" display size.

2.6.1.4.5 Lot of terminal blocks, circuit breakers, ground blocks as required for proper field terminations and circuit protection. Fuses will not be acceptable.

2.6.1.4.5.1 Important: Locate field terminal blocks to accommodate existing field wiring so that replacement/extending of wiring is not required. Photos indicate location for terminal blocks. Terminal blocks will be screw type only. Pressure terminals are not acceptable.

2.6.1.4.6 Two (2) Eight port Ethernet switches (4-FO-LC (SM), 4-RJ45) (one to be used with remote I/O network, one for HMI and County's local area network)

2.6.1.4.7 Two (2) FO duplex, single mode LC-LC patch cables, 62.5/124, (length to be determined).

2.6.1.4.8 Lot of RJ45 Ethernet patch cables required for connection to PLC, OIT, and other components. Lengths as necessary.

2.6.1.4.9 24VDC Power supply rated at 5A output.

2.6.1.4.10 120VAC surge suppressor for control panel protection.

2.6.1.4.11 Enclosure door operator devices in addition to HMI to be mounted through new door skin:

- 2.6.1.4.11.1 Control “power-on” green lens, LED pilot light.
- 2.6.1.4.11.2 Control power OFF/ON selector switch.
- 2.6.1.4.11.3 Reset momentary pushbutton.
- 2.6.1.4.11.4 Motorized influent valve open green lens, LED pilot light.
- 2.6.1.4.11.5 Motorized influent valve OPEN-CLOSE-AUTO three position maintained selector switch.
- 2.6.1.4.11.6 Alarm red lens, LED pilot light.
- 2.6.1.4.11.7 Motorized influent valve closed amber lens, LED pilot light.
- 2.6.1.4.11.8 Motorized influent valve failed to open red lens, LED pilot light.
- 2.6.1.4.11.9 Note: All operator devices must include labeling using printed manufacturer plates or engraved plates.
- 2.6.1.4.12 Properly sized 120VAC UPS to provide uninterrupted power during utility failure for a minimum of thirty minutes to allow key call outs to be executed by HMI as well as safe shutdown of HMI(PC). The UPS will provide information to HMI(PC) which will in turn execute a safe shutdown of HMI as remaining battery time subsides. The UPS will need to be located external to existing enclosure due to space constraints. Howard County will provide an appropriately sized mount in close proximity to the existing enclosure. Contractor will be responsible to properly connect wiring to the new control system. The following control panel components will need to be powered by UPS (at minimum):
 - 2.6.1.4.12.1 PLC and integral I/O modules that require power to prevent a fault in PLC. Note: If remote I/O loss of communications can result in a PLC fault, remote I/O needs to be configured so as not to cause a fault in CPU and allow it to continue in RUN state and communicate with HMI to indicate utility power alarm as well as be to automatically restart system after utility power is restored for 15 continuous minutes.
 - 2.6.1.4.12.2 HMI(PC) Note: HMI needs to reboot and automatically restart applications to begin data logging and call outs after normal power resumes as well as restart HMI application for operations.
 - 2.6.1.4.12.3 Any/all network switches/convertors needed as means to execute call outs to County Network.
 - 2.6.1.4.12.4 DC power supply.

- 2.6.2 Remote Well Control Panels: Provide fourteen (14) remote well control panels (populated back panels only) for interfacing with the main control panel. For each well, the following will be installed in an existing NEMA 4 outdoor-rated enclosure, wired and tested for a 120/240-volt, 1-phase, 3-wire, AC power supply. (See 2.6.B Exhibits for photos of existing control panels – for

reference only).

- 2.6.2.1 One (1) New, steel, powder coated back panel to replace existing back panel. Existing enclosure is a Hoffman C-24248.
- 2.6.2.2 Well pump requires one (1) motor starter (with aux contact to provide run status to PLC) with short-circuit protection (double pole 15A circuit breaker described in section 2.6-B-3), adjustable overload protection (with adjustable range of 5-15A) overload contact wired starter coil and additional auxiliary contact (to provide OL status to PLC). 3 pole motor starter (wired in correct single phase format) to be sized for 240V, single phase.
- 2.6.2.3 One (1) 15A double pole circuit breaker to isolate 240VAC feed well pump and (1) 10A single pole circuit breaker to isolate 120VAC to controls connected to one pole of 15A double pole circuit breaker. These can be a DIN rail mounted and does not need a through-the-door operator. One (1) each, hand-off-auto switch and green lens, LED run pilot light.
- 2.6.2.4 One (1) Ethernet interface (such as 1769-AENTR or approved equal) will communicate with the PLC in the main control panel. I/O modules shall be 1769 series CompactLogix or approved equal. Spare inputs and outputs will be wired to terminal blocks. I/O points providing the following:
 - 2.6.2.4.1 Eight (8) 120 VAC discrete inputs for following devices:
 - 2.6.2.4.1.1 (existing) Vault low temperature switch
 - 2.6.2.4.1.2 (existing) Vault high level float switch
 - 2.6.2.4.1.3 Well pump running
 - 2.6.2.4.1.4 Well pump OL
 - 2.6.2.4.1.5 (existing) Pulse style flow meter which may require interposing device to support I/O device (CONTRACTOR to provide interposing device if required). See specification section 13420 for flow meter details.
 - 2.6.2.4.1.6 HOA switch “not in auto”
 - 2.6.2.4.1.7 Balance of inputs to be left for spare and wired to terminal blocks
 - 2.6.2.4.2 Eight (8) 120VAC discrete relay outputs for following devices:
 - 2.6.2.4.2.1 Well pump motor starter (start/stop command)
 - 2.6.2.4.2.2 Balance of outputs to be left for spares and wired to terminal blocks
 - 2.6.2.4.3 Eight (8) analog inputs (current style) for following device:

- 2.6.2.4.3.1 (existing) Pressure transducer for well level
- 2.6.2.4.3.2 Balance of inputs to be left for spare and wired to terminal blocks
- 2.6.2.5 Two (2) surge suppressors for Ethernet cables (coming from previous vault and going to next vault). Must provide LED indication of proper operation/health.
- 2.6.2.6 One (1) single power circuit breaker for 120VAC control power circuit
- 2.6.2.7 One (1) surge suppressor for 120VAC circuit provided for control power. Must provide LED indication of proper operation.
- 2.6.2.8 One (Lot) of terminal blocks for field terminations and fuse blocks/fuses for protecting individual control circuits. Location of field termination terminal blocks MUST be located at the bottom of the back panels to allow for existing field wires to be landed on new back panels without having to splice wires. Terminal blocks must be positioned horizontal within four inches of the bottom edge of back panel.
- 2.6.2.9 One (1) 24VDC power supply rated at 5A output for pressure transduce and I/O (as required).
- 2.6.2.10 Ethernet communication specifics: See communication topology detail.
 - 2.6.2.10.1 In each well panel, provide the following:
 - 2.6.2.10.1.1 One (1) five port Ethernet switch (5-RJ45) for PLC I/O network.
 - 2.6.2.10.1.2 One (1) RJ45 Ethernet patch cables required for I/O adapter. Length of cable as necessary.
- 2.6.3 HMI PC Software Components/Functionality
 - 2.6.3.1 Graphical User Interface Description
 - 2.6.3.1.1 Displays color graphic of system with real time equipment/component operational state. Process variables (Examples: flow rate, temperature, pressures, levels) are to be displayed numerically and graphically. Provide operator with ability to make set point changes such as well level start/stop set points, ability to take individual wells offline, ability to start and stop filtration equipment in ground water building, reset alarms, read alarm history, etc. Following is basic screen structure:
 - 2.6.3.1.2 Site Map Screen: The site map screen shall show the site features such as roads, property lines, stream, with the treatment system wells, building, and piping highlighted for clarity. A screen menu shall be included that enables the user to select other screens in the software package. A scaled map of location along with GIS Shapefiles and AutoCAD electronic files are available to aid in creating this screen.
 - 2.6.3.1.3 Treatment System Screen: The treatment system screen shall diagrammatically display all the treatment process equipment and instrumentation within the treatment building. The user shall be able to

start and stop the entire system from the screen. The following process and instrumentation shall be identified:

- 2.6.3.1.3.1 Bag filter units with differential pressure gauge/switch indicating high and high-high pressure conditions
 - 2.6.3.1.3.2 Water flow meter instantaneous flowrate in gallons per minute (gpm) and totalized flow (gallons).
 - 2.6.3.1.3.3 Water temperature gauge - instantaneous temperature (°F).
 - 2.6.3.1.3.4 Water pressure switch at the air stripper influent--
 - 2.6.3.1.3.5 nozzle - high and high-high pressure conditions.
 - 2.6.3.1.3.6 Air blower - on/off condition.
 - 2.6.3.1.3.7 Air flowmeter- instantaneous flowrate (cfm) and totalized run time (hrs).
 - 2.6.3.1.3.8 Transfer pump - on/off condition and totalized run time (hrs).
 - 2.6.3.1.3.9 Air stripper air pressure gauge - instantaneous pressure across trays (W.C.) and high and high-high pressure conditions.
 - 2.6.3.1.3.10 Air stripper sump levels switches - high level indicator.
 - 2.6.3.1.3.11 Building temperature out of range -high/low.
 - 2.6.3.1.3.12 Building sump - high level.
 - 2.6.3.1.3.13 Smoke detector.
 - 2.6.3.1.3.14 Combustible gas monitor.
 - 2.6.3.1.3.15 Intrusion alarm.
- 2.6.3.1.4 Recovery Well Screen(s): The recovery well screen shall enable the user to start and stop individual well pumps. This screen shall display a vertical well diagram indicating individual well on/off conditions, pump high/low water level conditions, and real-time water elevation. A graphic object showing the level of the well will give visual of well water level. Individual well depths/level transmitter spans will be provided for programming.
- 2.6.3.1.5 Recovery Well Metering/Valve Vault Screen: The vault screen shall include a table that indicates the following conditions at each vault screen

- 2.6.3.1.5.1 Temperature Switch- high/low condition.
- 2.6.3.1.5.2 Vault water level switch -High level condition.
- 2.6.3.1.5.3 Well Pump- On/off status.
- 2.6.3.1.5.4 Water level- High/low condition.
- 2.6.3.1.5.5 Water flow rate (instantaneous)
- 2.6.3.1.5.6 Water flow total (today)
- 2.6.3.1.5.7 Water flow total (yesterday)
- 2.6.3.1.6 Alarm Screen: The alarm screen shall indicate present alarm conditions and historical alarm conditions with date and time of each alarm occurrence.
- 2.6.3.1.7 During a normal startup and shutdown sequence, provide pop-up window(s) that show startup and shutdown sequence list along with status of each step. Include all components of treatment system such as blowers, pumps, valves, remote wells, and any related time delays (and their accumulating values in real time) involved with startup and shutdown.
- 2.6.3.2 System alarms. The following alarms will be used by the HMI call out system to send out SMS text messages and/or email messages to on-call personnel. Alarm software needs to be capable of receiving positive feedback by contacted personnel to confirm call out was received. If first person in call out schedule does not provide positive feedback (taking responsibility for receiving call out), the call out system will then contact successive personnel in a predefined list until a positive feedback is received. These alarms will also be displayed on the HMI history screen. Alarm screens on HMI shall indicate present alarm conditions and historical alarm conditions with location, date and time of each alarm occurrence. The on-call list will need to be modified by trained Howard County personnel based upon the on-call schedule. CONTRACTOR will be required to provide training to COUNTY personnel to make changes to this system including adding new phone numbers, email addresses. Following is a list of alarms that will require call out notification:
 - 2.6.3.2.1 Pump overload (separate alarm for each of the fourteen (14) well pumps)
 - 2.6.3.2.2 Pump excess cycles – if pump cycles more than 10 times in an hour (separate alarm for each of the fourteen (14) well pumps)
 - 2.6.3.2.3 Vault high level alarm (separate alarm for each of the fourteen (14) well vaults)
 - 2.6.3.2.4 Vault low temperature alarm (separate alarm for each of the fourteen (14) well vaults)
 - 2.6.3.2.5 Motorized influent valve is closed (after system has been started)
 - 2.6.3.2.6 Both filter banks closed (after system has been started)

- 2.6.3.2.7 Ground water building low temperature alarm
 - 2.6.3.2.8 Ground water building high temperature alarm
 - 2.6.3.2.9 Security system intrusion/active alarm
 - 2.6.3.2.10 Security system fire active alarm
 - 2.6.3.2.11 Bag filter differential pressure alarm (after system has been started)
 - 2.6.3.2.12 Air stripper air flow – out of range (after system has been started)
 - 2.6.3.2.13 Air stripper sump – high-high level (after system has been started)
 - 2.6.3.2.14 Ground water building sump high level alarm
 - 2.6.3.2.15 Ground water building combustible gas detector high alarm (10% of the LEL)
 - 2.6.3.2.16 Groundwater building combustible gas detector high-high alarm (25% of the LEL)
 - 2.6.3.2.17 Ground water building smoke detector alarm
 - 2.6.3.2.18 Communications failure alarm – this happens in the event that the HMI loses communications with the ground water building PLC for a period of greater than 2 minutes. The well that has lost communications to the PLC will be clearly identified on the HMI. NOTE: In the event of communications failure to the PLC, the well pump will shut off as fail safe to prevent damage to equipment.
- 2.6.3.3 Data Collection/Report Generation.
- 2.6.3.3.1 The HMI PC will collect specific data points, in a specific sampling frequency to be used for generating reports that will be required for daily, weekly, monthly, quarterly, semiannual and annual regulatory submission. Examples of each of these reports showing the format will be provided for CONTRACTOR review. HMI software will be used collect/store the data. This data needs to be written to a COUNTY database server (on the local area network). This server is remote from the landfill and specific setup details will be provided by the COUNTY. Format of this data needs to be standard SQL format
 - 2.6.3.3.2 Software for regulatory report generation of weekly, monthly, quarterly, semiannual and annual reports with ability to modify report templates as needs change. Dream Reports® or approved equal software will be used to generate these reports. CONTRACTOR will provide the software, set up reports and train COUNTY employees on the use and how to edit report templates. This software will be located on a remote PC and have direct access to the COUNTY database server for data retrieval. The COUNTY will install any necessary connection credentials between the remote

PC and the COUNTY database server.

- 2.6.3.3.3 Important – Data register format for totalized gallons, cycles and runtimes, must be in a register format larger than 16-bit to allow for large values over long periods of time. Data to be logged (Examples are provided in the Request for Proposal)
 - 2.6.3.3.3.1 Water Flow- Totalized flow (gallons), average flowrate (gpm) at each well
 - 2.6.3.3.3.2 Water temperature - Average temperature
 - 2.6.3.3.3.3 Blower- Cycles, runtime (hrs)
 - 2.6.3.3.3.4 Air flow- Totalized flow (cf)
 - 2.6.3.3.3.5 Average air flow rate (cfm)
 - 2.6.3.3.3.6 Transfer pump - Cycles, runtime (hrs)
 - 2.6.3.3.3.7 Well pumps- Cycles, runtime (hrs)
 - 2.6.3.3.3.8 All alarms generated by the system
- 2.6.3.4 Additional Software to be provided and installed on HMI PC
 - 2.6.3.4.1 Software for monitoring, programming of PLC system
 - 2.6.3.4.2 Software for programming, modifying, deploying HMI graphics application including alarm call-out system (if separate).
 - 2.6.3.4.3 Software Licensing: All purchased software must be licensed to Howard County Government

2.7 ALPHA RIDGE LANDFILL SITE PRODUCTS

- 2.7.1 ACS Control Unit: Located in Ground Water Building –(See 2.7.A Exhibits for photos of existing system – for reference only.)
 - 2.7.1.1 Provide PLC based system to meet this specification.
 - 2.7.1.2 PLC-based system shall be housed in existing U.L. listed enclosure.
 - 2.7.1.3 Existing U.L. listed enclosure currently has 120 volt, 1-phase, 3-wire, AC power supply.
 - 2.7.1.4 Minimum required components:
 - 2.7.1.4.1 One (1) new, steel, powder coated back panel to replace existing back panel. Existing enclosure is a (no brand/label) 30x36x12 (WxHxD). Back panel is 27x33 (WxH). Details of existing hole pattern available upon request.
 - 2.7.1.4.2 One (1) new, steel, powder coated door skin to attach over existing door to cover existing door penetrations. Size per enclosure described

in previous bullet.

2.7.1.4.3 A programmable logic controller (PLC), fully programmed and tested. The PLC system shall contain space for expansion for future controls. The PLC system will contain (2) Ethernet ports, one for remote I/O communications (Ethernet/IP or equal) and the second for communications with local HMI PC and local area network. PLC will be an Allen Bradley CompactLogix dual Ethernet series or approved equal. All I/O modules shall be 1769 series CompacLogix or approved equal.

2.7.1.4.3.1 Thirty-two (32) 120VAC discrete (on/off) inputs.

- * A/S inlet water pressure high
- * Air pressure high
- * A/S blower on
- * A/S blower OL
- * Discharge pump on
- * Discharge pump OL
- * High-High filter pressure
- * A/S High-High level
- * Building temperature low
- * Building temperature high
- * Security system (intrusion or fire)
- * High filter pressure
- * Building sump high level
- * A/S inlet water pressure high
- * A/S low air pressure
- * System reset pushbutton
- * Note: Balance of spare inputs wired to terminal blocks for future use.

2.7.1.4.3.2 Sixteen (16) 120VAC rated dry contact discrete output

- * A/S blower motor starter
- * A/S transfer pump starter
- * Red lens, alarm, LED pilot light

- * Motorized influent valve energize open command
- * Motorized influent valve energize open green lens, LED pilot light
- * Motorized influent valve energize closed amber lens, LED pilot light
- * Motorized influent valve energize FTO red lens, LED pilot light
- * Filter bank 1 select control relay
- * Filter bank 2 select control relay
- * Alarm strobe
- * Note: Balance of spare outputs wired to terminal blocks for future use.

2.7.1.4.3.3 Eight (8) analog inputs (4-20ma rated)

- * Influent water flow rate
- * Influent water temperature
- * Building LEL

2.7.1.4.3.4 Note: Balance of spare inputs wired to terminal blocks for future use.

2.7.1.4.3.5 Space for (3) additional discrete inputs, discrete outputs, and analog inputs, modules (total) as future needs dictate. Three spaces either in regular rack, or space on back panel to add three more modules in the event there is not a physical rack (Example: Compact Logix system).

2.7.1.4.4 One (1) panel mounted graphical Human Machine Interface (HMI) communicating directly to PLC. This HMI will utilize a software package such as Wonderware's Intouch ME (or approved equal) that will provide ability to meet requirements as detailed in section 2.7.C. This will be mounted in existing control enclosure in ground water building. The HMI shall be a color touch screen and no less than 15" display size.

2.7.1.4.5 Lot of terminal blocks, circuit breakers, ground blocks as required for proper field terminations and circuit protection. Fuses will not be acceptable.

- 2.7.1.4.5.1 Important: Locate field terminal blocks to accommodate existing field wiring so that replacement/extending of wiring is not required. Photos indicate location for terminal blocks. Terminal blocks will be screw type only. Pressure terminals are not acceptable.
- 2.7.1.4.6 Two (2) Eight port Ethernet switches (4-FO-LC, 4-RJ45) (one to be used with remote I/O network, one for HMI and County's local area network)
- 2.7.1.4.7 Two (2) FO duplex, single mode LC-LC patch cables, 62.5/124, (length to be determined)
- 2.7.1.4.8 Lot of RJ45 Ethernet patch cables required for connection to PLC, OIT and other components. Lengths as necessary.
- 2.7.1.4.9 24VDC Power supply rated at 5A output.
- 2.7.1.4.10 120VAC surge suppressor for control panel protection.
- 2.7.1.4.11 Enclosure door operator devices in addition to HMI to be mounted through new door skin:
- 2.7.1.4.11.1 Control power on green lens, LED pilot light
 - 2.7.1.4.11.2 Control power OFF/ON selector switch
 - 2.7.1.4.11.3 Reset momentary pushbutton
 - 2.7.1.4.11.4 Motorized influent valve open green lens, LED pilot light
 - 2.7.1.4.11.5 Motorized influent valve OPEN-CLOSE-AUTO three position maintained selector switch
 - 2.7.1.4.11.6 Alarm red lens, LED pilot light
 - 2.7.1.4.11.7 Motorized influent valve closed amber lens, LED pilot light
 - 2.7.1.4.11.8 Motorized influent valve failed to open red lens, LED pilot light
 - 2.7.1.4.11.9 Note: All operator devices must include labeling using printed manufacturer plates or engraved plates.
- 2.7.1.4.12 Properly sized 120VAC UPS to provide uninterrupted power during utility failure for a minimum of thirty minutes to allow key call outs to be executed by HMI as well as safe shutdown of HMI(PC). The UPS will provide information to HMI(PC) which will in turn execute a safe shutdown of HMI as remaining battery time subsides. The UPS will need to be located external to existing enclosure due to space constraints. Howard County will provide an appropriately sized mount, in close proximity to the existing enclosure. Contractor will be

responsible to properly connect wiring to the new control system. The following control panel components will need to be powered by UPS (at minimum):

- 2.7.1.4.12.1 PLC and integral I/O modules that require power to prevent a fault in PLC. Note: If remote I/O loss of communications can result in a PLC fault, remote I/O needs to be configured so as not to cause a fault in CPU and allow it to continue in RUN state and communicate with HMI to indicate utility power alarm as well as be to automatically restart system after utility power is restored for 15 continuous minutes.
- 2.7.1.4.12.2 HMI(PC) Note: HMI needs to reboot and automatically restart applications to begin data logging and call outs after normal power resumes as well as restart HMI application for operations.
- 2.7.1.4.12.3 Any/all network switches/convertors needed as means to execute call outs to County Network.
- 2.7.1.4.12.4 DC power supply

- 2.7.2 Remote Well Control Panels: Provide twenty two (22) remote well control panels (populated back panels only) for interfacing with the main control panel. Twenty (20) of these panels are identical and two (2) are newer. For each twenty (20) older well panels, the following will be installed in an existing NEMA 4 outdoor rated enclosure, wired and tested for a 120/240-volt, 1-phase, 3-wire, AC power supply (see 2.7.B Exhibits of “older” control panels – for reference only. For the two (2) new well panels, the supply voltage is 480-volt, 3-phase. Step-down transformers, from 480 to 240 V, rated at 5KVA, and 480 to 120 V, rated at 1.5 KVA (both single phase), with proper fuse protection, will be required for each well panel, as well as a 480V, 3-Phase 30A non-fused through door operated disconnect switch. (See 2.7.B Exhibits of the two newer control panels – for reference only.)

NOTE: All Subsection to Section 2.7.B apply to all twenty two (22) remote well control panels.

- 2.7.2.1 One (1) New, steel, powder coated back panel to replace existing back panel to replace existing back panel. Existing twenty (20) older well enclosures are (no brand/label) 20x24x8 (WxHxD). Back panel is 17.25x21.25 (WxH). Details of existing hole pattern available upon request. Existing two newer well enclosures are Saginaw brand, part number SCE-6EL4812LPPL The back panel for the newer wells is part number SCE-60P48.
- 2.7.2.2 Well pump requires one (1) motor starter (with aux contact to provide run status to PLC) with short-circuit protection (double pole 20A circuit breaker described in section 2.7-B-3), adjustable overload protection (with adjustable range of 5-15A) overload contact wired starter coil and additional auxiliary contact (to provide OL status to PLC). 3 pole motor starter (wired in correct single phase format) to be sized for 240V, single phase.
- 2.7.2.3 One (1) 20A double pole circuit breaker to isolate 240VAC feed well pump and (1) 20A single pole circuit breaker to isolate 120VAC to controls. These can be a DIN

rail mounted and does not need a through-the-door operator. The exception is the electrical details for the two newer well panels as described in Section 2.7.B.

- 2.7.2.4 One (1) each, hand-off-auto switch and green lens, LED run pilot light.
- 2.7.2.5 One (1) Ethernet interface (such as 1769-AENTR or approved equal) will communicate with the PLC in the main control panel. I/O modules shall be 1769 series CompactLogix or approved equal. Spare inputs and outputs will be wired to terminal blocks (described in 10) I/O points providing the following:
 - 2.7.2.5.1 Eight (8) 120 VAC discrete inputs for following devices:
 - 2.7.2.5.1.1 (existing) Vault low temperature switch
 - 2.7.2.5.1.2 (existing) Vault high level float switch
 - 2.7.2.5.1.3 Well pump running
 - 2.7.2.5.1.4 Well pump OL
 - 2.7.2.5.1.5 (existing) Pulse style flow meter which may require interposing device to support I/O device (CONTRACTOR to provide interposing device if required). See specification section 13420 for flow meter details.
 - 2.7.2.5.1.6 HOA switch “not in auto”
 - 2.7.2.5.1.7 Balance of inputs to be left for spare and wired to terminal blocks
 - 2.7.2.5.2 Eight (8) 120VAC discrete relay outputs for following devices:
 - 2.7.2.5.2.1 Well pump motor starter (start/stop command)
 - 2.7.2.5.2.2 Balance of outputs to be left for spares and wired to terminal blocks
 - 2.7.2.5.3 Eight (8) analog inputs (current style) for following device:
 - 2.7.2.5.3.1 (existing) Pressure transducer for well level
 - 2.7.2.5.3.2 Balance of inputs to be left for spare and wired to terminal blocks
- 2.7.2.6 Two (2) surge suppressors for Ethernet cables (coming from previous vault and going to next vault). Must provide LED indication of proper operation/health.
- 2.7.2.7 One (1) single pole circuit breaker for 120VAC control power circuit.
- 2.7.2.8 One (1) surge suppressor for 120VAC circuit provided for control power. Must provide LED indication of proper operation.
- 2.7.2.9 One (Lot) of terminal blocks for field terminations and fuse blocks/fuses for protecting individual control circuits. Location of field termination terminal blocks

MUST be located at the bottom of the back panels to allow for existing field wires to be landed on new back panels without having to splice wires. Terminal blocks must be positioned horizontal within four inches of the bottom edge of back panel.

2.7.2.10 One (1) 24VDC power supply rated at 5A output for pressure transduce and I/O (as required)

2.7.2.11 Ethernet communication specifics: See communication topology detail.

2.7.2.11.1 In each well panel, provide the following:

2.7.2.11.1.1 One (1) Eight port Ethernet switch (4-FO-LC, 4-RJ45)

2.7.2.11.1.2 Two (2) FO duplex, single mode LC-LC patch cables, 62.5/124, length to be determined.

2.7.2.11.1.3 One (1) RJ45 Ethernet patch cable required for connection to remote I/O rack. Length of cables to be as necessary.

2.7.3 HMI PC Software Components/Functionality

2.7.3.1 Graphical User Interface Description

2.7.3.1.1 Displays color graphic of system with real time equipment/component operational state. Process variables (Examples: flow rate, temperature, pressures, levels) are to be displayed numerically and graphically. Provide operator with ability to make set point changes such as well level start/stop set points, ability to take individual wells offline, ability to start and stop filtration equipment in ground water building, reset alarms, read alarm history, etc. Following is basic screen structure:

2.7.3.1.2 Site Map Screen: The site map screen shall show the site features such as roads, property lines, stream, with the treatment system wells, building, and piping highlighted for clarity. A screen menu shall be included that enables the user to select other screens in the software package. A scaled map of location along with GIS Shapefiles and AutoCADD electronic files are available to aid in creating this screen.

2.7.3.1.3 Treatment System Screen: The treatment system screen shall diagrammatically display all of the treatment process equipment and instrumentation within the treatment building. The user shall be able to start and stop the entire system from the screen. The following process and instrumentation shall be identified:

2.7.3.1.3.1 Bag filter units with differential pressure gauge/switch indicating high and high-high pressure conditions.

2.7.3.1.3.2 Water flow meter instantaneous flowrate in gallons per minute (gpm) and totalized flow (gallons).

2.7.3.1.3.3 Water temperature gauge - instantaneous temperature ("F).

- 2.7.3.1.3.4 Water pressure switch at the air stripper influent--
 - 2.7.3.1.3.5 nozzle - high and high-high pressure conditions.
 - 2.7.3.1.3.6 Air blower - on/off condition.
 - 2.7.3.1.3.7 Air flowmeter- instantaneous flowrate (cfm) and totalized run time (hrs).
 - 2.7.3.1.3.8 Transfer pump - on/off condition and totalized run time (hrs).
 - 2.7.3.1.3.9 Air stripper air pressure gauge - instantaneous pressure across trays (W.C.) and high and High-High pressure conditions.
 - 2.7.3.1.3.10 Air stripper sump levels switches - high level indicator.
 - 2.7.3.1.3.11 Building temperature out of range -high/low.
 - 2.7.3.1.3.12 Building sump - high level.
 - 2.7.3.1.3.13 Smoke detector.
 - 2.7.3.1.3.14 Combustible gas monitor.
 - 2.7.3.1.3.15 Intrusion alarm.
- 2.7.3.1.4 Recovery Well Screen(s): The recovery well screen shall enable the user to start and stop individual well pumps. This screen shall display a vertical well diagram indicating individual well on/off conditions, pump high/low water level conditions and real-time water elevation. A graphic object showing the level of the well will give visual of well water level. Individual well depths/level transmitter spans will be provided for programming.
- 2.7.3.1.5 Recovery Well Metering/Valve Vault Screen: The vault screen shall provide a table that indicates the following conditions at each vault:
- 2.7.3.1.5.1 Temperature Switch- high/low condition.
 - 2.7.3.1.5.2 Vault water level switch -High level condition.
 - 2.7.3.1.5.3 Well Pump- On/off status.
 - 2.7.3.1.5.4 Water level- High/low condition.
 - 2.7.3.1.5.5 Water flow rate (instantaneous)
 - 2.7.3.1.5.6 Water flow total (today)
 - 2.7.3.1.5.7 Water flow total (yesterday)
- 2.7.3.1.6 Alarm Screen: The alarm screen shall indicate present alarm conditions and historical alarm conditions with date and time of each alarm occurrence.

- 2.7.3.1.7 During a normal startup and shutdown sequence, provide pop-up window(s) that show startup and shutdown sequence list along with status of each step. Include all components of treatment system such as blowers, pumps, valves, remote wells, and any related time delays (and their accumulating values in real time) involved with startup and shutdown.
- 2.7.3.2 System alarms. The following alarms will be used by the HMI call out system to send out SMS text messages and/or email messages to on-call personnel. Alarm software needs to be capable of receiving positive feedback by contacted personnel to confirm call out was received. If first person in call out schedule does not provide positive feedback (taking responsibility for receiving call out), the call out system will then contact successive personnel in a predefined list until a positive feedback is received. These alarms will also be displayed on the HMI history screen. Alarm screens on HMI shall indicate present alarm conditions and historical alarm conditions with location, date and time of each alarm occurrence. The on-call list will need to be modified by trained Howard County personnel based upon the on-call schedule. The Contractor will be required to provide training to County personnel to make changes to this system including adding new phone numbers, email addresses. Following is a list of alarms that will require call out notification:
- 2.7.3.2.1 Pump overload (separate alarm for each of the twenty-two (22) well pumps)
- 2.7.3.2.2 Pump excess cycles – if pump cycles more than 10 times in an hour (separate alarm for each of the twenty-two (22) well pumps)
- 2.7.3.2.3 Vault high level alarm (separate alarm for each of the twenty-two (22) well vaults)
- 2.7.3.2.4 Vault low temperature alarm (separate alarm for each of the twenty-two (22) well vaults)
- 2.7.3.2.5 Motorized influent valve is closed (after system has been started)
- 2.7.3.2.6 Both filter banks closed (after system has been started)
- 2.7.3.2.7 Ground water building low temperature alarm
- 2.7.3.2.8 Ground water building high temperature alarm
- 2.7.3.2.9 Security system intrusion active alarm
- 2.7.3.2.10 Security system fire active alarm
- 2.7.3.2.11 Bag filter differential pressure alarm (after system has been started)
- 2.7.3.2.12 Air stripper air flow – out of range (after system has been started)
- 2.7.3.2.13 Air stripper sump – High-High level (after system has been started)
- 2.7.3.2.14 Ground water building sump high level alarm
- 2.7.3.2.15 Ground water building combustible gas detector high alarm (10% of

the LEL)

- 2.7.3.2.16 Groundwater building combustible gas detector high-high alarm (25% of the LEL)
- 2.7.3.2.17 Ground water building smoke detector alarm
- 2.7.3.2.18 Communications failure alarm – this happens in the event that the HMI loses communications with the ground water building PLC for a period of greater than 2 minutes. The well that has lost communications to the PLC will be clearly identified on the HMI. NOTE: In the event of communications failure to the PLC, the well pump will shut off as fail safe to prevent damage to equipment

2.7.3.3 Data Collection/Report Generation

2.7.3.3.1 The HMI PC will collect specific data points, in a specific sampling frequency to be used for generating reports that will be required for daily, weekly, monthly, quarterly, semiannual and annual regulatory submission. Examples of each of these reports showing the format will be provided for CONTRACTOR review. HMI software will be used collect/store the data. This data needs to be written to a COUNTY database server (on the local area network). This server is remote from the landfill and specific setup details will be provided by the COUNTY. Format of this data needs to be standard SQL format.

2.7.3.3.2 Software for regulatory report generation of weekly, monthly, quarterly, semiannual and annual reports with ability to modify report templates as needs change. Dream Reports® or approved equal software will be used to generate these reports. CONTRACTOR will provide the software, set up reports and train COUNTY employees on the use and how to edit the report templates. This software will be located on a remote PC and have direct access to the COUNTY database server for data retrieval. The COUNTY will install the necessary connection credentials between the remote PC and the COUNTY database server.

2.7.3.3.2.1 Important – Data register format for totalized gallons, cycles, and runtimes must be in a register format larger than 16-bit to allow for large values over a long time period. Data to be logged (Examples are provided in the Request for Proposal).

- * Water Flow – Totalized flow (gallons), average flow rate (GPM) at each well.
- * Water Temperature – Average temperature
- * Blower Cycles – runtime (hrs)
- * Air Flow – totalized flow (CF)
- * Average Air Flow Rate (CFM)

- * Transfer Pump Cycles – Runtime (hrs)
- * Well Pumps – Cycles runtime (hrs)
- * All Alarms – generated by the system

2.7.3.4 Additional Software to be provided and installed on HMI PC

- 2.7.3.4.1 Software for monitoring, programming of PLC system
- 2.7.3.4.2 Software for programming, modifying, deploying HMI graphics application and call-out system if separate.
- 2.7.3.4.3 Software Licensing: All purchased software must be licensed to Howard County Government

2.8 SEQUENCE OF OPERATIONS (Common for both sites)

2.8.1 System mode descriptions

- 2.8.1.1 Hand Mode - well pumps, blowers, etc. are capable of being individually, manually operated (started and regulated) without intervention of the ACS. In this mode, the operator alone, is responsible for observing and limiting system operation. The ACS will monitor all alarm conditions and display them. The manual mode can be used during individual equipment testing and maintenance procedures. If a Hand-Off Auto selector switch is left in “hand” position for more than fifteen minutes, an alarm will be generated on the HMI. **DO NOT OPERATE IN THIS MODE EXCEPT FOR TROUBLE SHOOTING AND FOR LESS THAN ONE MINUTE. CONTINUOUS OPERATION IN THE MANUAL MODE MUST BE APPROVED BY THE ENGINEER.**
- 2.8.1.2 Auto Mode - the individual components do not operate except under the direct control of the ACS. The ACS will monitor all alarm conditions and display them.
- 2.8.1.3 Off - Nothing will operate in the ‘Off’ setting. If a Hand-Off Auto selector switch is left in “hand” position for more than fifteen minutes, an alarm will be generated on the HMI.

2.8.2 Routine System Startup can be accomplished automatically using the programmable logic control (PLC).

- 2.8.2.1 Turn “Control Power” selector switch to ON position.
- 2.8.2.2 If any alarm light is lit, attempt to clear it by pressing the 'Reset' push button.
- 2.8.2.3 Confirm the switch for each motor, well pump and air stripper control panel system to the ‘Auto’ position.
- 2.8.2.4 Start: Pushing the "START" button on HMI while in the "AUTO" mode, causes the PLC to initialize all startup delay timers, check the status of all limit controls and interlocks and, if there are not alarm conditions relative to startup, proceed with bringing all components into operation in the proper sequence and establishing a state of continuous, supervised operation. This same sequence is also followed

automatically after a power failure.

- 2.8.2.4.1 Start air stripper blower
- 2.8.2.4.2 Minimum airflow through the stripper is established and the discharge water level in the air stripper sump is monitored.
- 2.8.2.4.3 Open main inlet valve.
- 2.8.2.4.4 Open valve to filter bank one.
- 2.8.2.4.5 The recovery well pumps are started subject to level controls.
- 2.8.2.4.6 The system displays an 'Auto Mode' on HMI and starts to monitor the flow rate, system liquid pressure, air flow, building sensors, well liquid levels, and bag differential pressure.
- 2.8.2.4.7 The "RUN" pilot light on the ACS main control panel illuminates when the treatment system is fully online and operational in the automatic mode.

2.8.2.5 Alarms: If, at any time, a sensor is not in the correct state for the current status of the system, the PLC outputs an "Alarm" which consists of a visual alarm and in certain instances is accompanied by a call-out and for system shutdown. Only the first alarm is indicated.

2.8.3 Routine System Shutdown can be accomplished automatically using the programmable logic control (PLC).

2.8.3.1 Press "system shutdown" pushbutton on HMI.

2.8.3.1.1 All pumps will stop.

2.8.3.1.2 Main influent valve will close.

2.8.3.1.3 Filter bank valves (1 & 2) will close.

2.8.3.1.4 The aerator blower will run for an additional ten minutes to ensure that water cascading through the aerator is properly treated.

2.8.4 Emergency System Shutdown

2.8.4.1 Press emergency stop pushbutton on door of control panel.

2.8.4.1.1 All motors will stop immediately.

2.8.4.1.2 Main inlet valve will close.

2.8.4.1.3 Filter bank valves 1 & 2 will close.

2.8.5 Individual Equipment Operation Descriptions

2.8.5.1 Packaged Air Stripper - The blower can be operated in 'Hand' or 'Auto' mode. When set in 'Auto', the PLC starts the blower first and monitors the airflow sensor status to determine that proper blower operation and/or air flow through the air stripper is taking place. The PLC also monitors the air stripper discharge water sump float

switch to determine that water is not backing up in the air stripper sump. If either low air flow (measured as pressure) or high discharge water level is sensed, water flow to the system is stopped, the proper alarm is activated, and the system is shut down.

- 2.8.5.1.1 Under 'Auto' mode, when all the well pumps shut down, a delay timer is initiated.
 - 2.8.5.1.2 The aerator blower will continue to run until this timer times out after ten minutes. The delay ensures that any water cascading through the aerator is properly treated. If a well pump starts again prior to the aerator blower shutting down, this timer resets.
 - 2.8.5.1.3 The blower brings in fresh air from outside of the treatment building through an air filter to minimize dust and debris buildup in the blower housing and air stripper sump reducing maintenance requirements. The damper at the inlet side of the blower must be adjusted according to the manufacturer's recommendations for optimal air flow rate efficiency.
 - 2.8.5.1.4 During startup, and under normal operation, the operator should watch for anything unusual such as vibration, squealing, overheating, etc. Intermittently check motor amperage against nameplate amperage to ensure motor is not overloading.
 - 2.8.5.1.5 The air stripper, instrumentation, and alarm sensors are continuously monitored by the ACS during normal operation. Any operational conditions that fall outside of acceptable parameters will cause a system shutdown. Refer to the manufacturer's O&M manual
- 2.8.5.2 Well Pumps - Each well pump can be operated in 'Hand' or 'Auto' mode. In 'Auto', the well pumps are started following the startup sequence. The well pumps are restarted in sequence with delay between wells to minimize water surge/hammer in the system. Water flow from each well is monitored by an individual well-specific flow sensor. The total flow to the air stripper is monitored by an additional flow sensor. In the event that low or high water flow to the air stripper is detected, the well pumps are shut down.
- 2.8.5.2.1 The well level transmitter will partially limit pump operation in the manual mode by preventing operation under a low water level condition within the well. This feature limits the chance of pump motor burnout due to dry operation.
 - 2.8.5.2.2 The groundwater recovery wells operate automatically except for flow rates which are controlled manually by the flow control ball valves located inside the meter/valve vaults. Wells will periodically cycle on and off as the groundwater elevations vary. The operator should adjust the well flow control valves to minimize pump cycling. The operator may also need to adjust the high (pump on) and low (pump off) groundwater elevation set points (in the ACS program) for each well to achieve remediation objectives.
 - 2.8.5.2.3 The pumping system should be periodically checked for flow rates,

pressure, drawdown, periods of cycling, and operation of controls. Under no circumstances should a pump be operated for any prolonged period of time with the flow control valve (inside the meter/valve vault) closed. This can result in motor and pump damage due to overheating. If a pump fails to operate, or there is a loss of performance, refer to troubleshooting guidance in pump literature.

- 2.8.5.3 Total Water Flow Rate Sensor - The water flow sensor, monitoring total flow to the air stripper, senses and displays water flow rate in gallons per minute, converts it to total accumulated flow, displays it in gallons, and outputs an analog signal to the PLC. The PLC monitors instantaneous flow rate, daily flow volume, and long-term flow volume. An instantaneous flow that is less than the low set flow to the air stripper results in a shutdown of the system (if, and only if, both the total system flow sensor and the sum of the individual well flow sensors indicate a total flow rate of less than 20 gallons per minute).
- 2.8.5.4 System Pressure - The delivery piping is monitored for high pressure at the point of inlet to the air stripper. High pressure indicates a blockage in the system. If high pressure persists for 1 minute, the PLC shuts the system down and a 'system shutdown' is sent to call-out system. This prevents damage to the submersible pumps and/or other components.
- 2.8.5.5 Bag Filter Unit - The unit is a duplex system with individually valved modules which may operate independently, providing continuous service during bag filter changes. When the differential pressure rises above the 'High' setting for more than 1 minute, an alarm is signaled and sent to call-out system, but the system is not shut down. The bag filters should be changed out, one at a time, while the system is operating, before they become clogged. If the pressure exceeds the 'High-High' setting, the PLC shuts the system down and initiates a call-out. Liquid flow is from the inside of each filter bag to the outside. The support baskets and filter bags are securely locked into a recess at the top of the vessel rim, providing a compression seal. All particles are trapped inside the bags for easy disposal. The operator should periodically check that the two valve sets are fully open. An inlet and outlet valve is provided for each vessel.
- 2.8.5.6 Temperature Sensor - The treatment building thermostat is set to maintain a minimum temperature of 50° F. If the temperature falls below this setting for more than 15 minutes, an alarm is signaled and a call-out is triggered, but the system is not shut down.
- 2.8.5.7 Building Security - The treatment building entrance door is monitored by a security switch to an existing security system. If the building is entered without disabling the security using the security system keypad, the PLC will initiate a call-out, but the treatment system is not shut down.
- 2.8.5.8 Transfer Pump - The transfer pump is fitted with piping, valves and controls to allow for either gravity flow or pumped flow of effluent from the air stripper unit to the outfall structure. The operator should set the transfer pump to AUTOMATIC mode so that it will turn on automatically in response to a high-water level in the air stripper sump.

2.8.6 System Parameter Set Points:

Parameter	Set Points	Comments
Level Transmitter - Pump Start/Stop Set Points in each Well.	Varies by Well	These Set Points Will be Determined by Operations Personnel
Bag Filter Differential Pressure	25 psi High	High initiates an alarm sent by call out system indicating need for bag change, High - High shuts the system down and the blower times-out in 10 minutes.
	40 psi High - High	
High Water Pressure at Air Stripper Inlet	14 psi	Alarm message and system shuts down if high pressure persists for more than 1 minute.
Low or High Water Flow Rate	20 gpm Low	Alarm message and system shut down if water flow rate to the air stripper measured by the flow sensor is too low or too high. The low flow alarm is initiated if both the flow rate read by the total system flow meter and the sum of the individual well flow rates is less than 3 gpm.
	150 gpm High (Carrs Mill)	
	200 GPM High (Alpha Ridge)	
Air stripper blower air flow - Out of Range.	900 - 1,800 CFM	Alarm Message
Air Stripper sump water level, High High	Magnetic Reed Float Switch	Alarm message and system shut down if water level exceeds high-high setting in the stripper sump.
Building sump water level, High	Set just below grate	Alarm message and system shut down if the water level in the building sump exceeds the level switch setting.
Air pressure in the Stripper Sump.	5-20 inches of W.C.	Alarm Message. If too low, the ACS will shut down the wells, continue blower operation, and then reset the wells. If air pressure is too high, the ACS will shut down the wells, and then the stripper.
Building Temperature too Low	50° F	Alarm Message
Building Security Alarm Trip	N/A	Alarm Message
Building Smoke Detector Alarm Trip	N/A	Alarm Message

2.8.7 System Call-out Alarm List.

2.8.7.1 Following are shutdown conditions:

2.8.7.1.1 High short-term flow rate

2.8.7.1.2 Low short-term flow rate

2.8.7.1.3 High long-term flow rate

- 2.8.7.1.4 Low long-term flow rate
- 2.8.7.1.5 Airflow rate high (>2000 SCFM)
- 2.8.7.1.6 Airflow rate low (<500 SCFM)
- 2.8.7.1.7 Combustible gas concentration high-high (>25% of LEL)
- 2.8.7.1.8 Water pressure out-of-range
- 2.8.7.1.9 Air pressure out-of-range
- 2.8.7.1.10 Air stripper sump water level high-high
- 2.8.7.1.11 Building sump water level high
- 2.8.7.1.12 Bag filter differential pressure high-high (>40 psi)

2.8.8 Following are maintenance conditions

- 2.8.8.1 Combustible Gas Concentration High (>10% of LEL)
- 2.8.8.2 Bag Filter Differential Pressure High (>25 psi)
- 2.8.8.3 Low Vault Temperature
- 2.8.8.4 Vault Water Level High (switch activated)
- 2.8.8.5 Treatment Building Low Temperature
- 2.8.8.6 Treatment Building High Temperature
- 2.8.8.7 Following are security/sensor conditions:
- 2.8.8.8 Treatment building intrusion alarm
- 2.8.8.9 Treatment building smoke alarm

PART 3 EXECUTION

3.1 INSPECTION

- 3.1.1 The CONTRACTOR shall inspect the ACS components upon delivery to the site for damage and conformance with these Specifications prior to installation and acceptance.
- 3.1.2 Should defects become evident during inspection, testing or within the one (1) year guarantee period, the CONTRACTOR shall repair or replace the defective component as approved by the COUNTY PROJECT MANAGER.

3.2 INSTALLATION

- 3.2.1 Install in accordance with Contract Drawings, approved shop drawings and as directed by the manufacturer's representative.
- 3.2.2 The CONTRACTOR shall install the equipment specified in such a manner to ensure complete

system integration and operational requirements are met.

3.3 SYSTEM START-UP SERVICES

3.3.1 The CONTRACTOR shall provide the services of one engineer assisted by one field technician from the ACS supplier or manufacturer for a minimum of three (3) days during on-site start-up, de-bugging and troubleshooting or as long as necessary. The CONTRACTOR shall schedule and coordinate these services with the approval of the COUNTY Project Manager.

3.4 SYSTEM OPERATION TRAINING AND PROGRAMMING SERVICES

3.4.1 The CONTRACTOR shall provide a minimum of four (4) days of on-site engineering services for training at the one of the sites for operations, electrician and report generation. The CONTRACTOR shall schedule and coordinate these services with the approval of the COUNTY Project Manager.

END OF SECTION 13400

SECTION 13420

FLOW METER REGISTER

PART 1 GENERAL

1.1 DESCRIPTION

- 1.1.1 High-resolution registers compatible with existing Badger Meter Recordall Cold Water Thermoplastic Disc Meter will be installed at each well. Badger Meter product High Resolution Encoder HR-LCD 4-20, or equal. The register shall be installed in accordance with the manufacturer's recommendations and guidance.
- 1.1.2 Register shall be installed to existing disc meter to produce a 4-20 mA DC output signal to the PLC for recording instantaneous and totalized flow at each well. Register shall be fully electronic, solid-state with no moving parts. Contractor shall install the register on the existing flow meter as well as all ancillary wiring and connections to ensure proper operation and communication.

1.2 RELATED SECTIONS

- 1.2.1 Section 13400 describes the PLC to which the register will be connected for recording output.
- 1.2.2 All interconnecting wiring and conduit between instruments, panels, and other field equipment and devices and required power sources is described in Section 16.

1.3 REFERENCES

- 1.3.1 National Electrical Manufacturers Association (NEMA):
- 1.3.2 NEMA ICS 6-1993 (R2001, R2006) Enclosures for Industrial Controls and Systems.
- 1.3.3 National Fire Protection Agency.
- 1.3.4 NFPA 70: National Electrical Code 2017

1.4 SUBMITTALS

- 1.4.1 Provide submittals in accordance with the General Provisions.
- 1.4.2 Product Data: Provide data for Flow Meter Register to include description of operation, specifications, and system resolution.
- 1.4.3 Shop Drawings: to include dimensioned drawings, mounting details, layout drawings, wiring diagrams detailing all connections.
- 1.4.4 Contractor shall furnish Operation and Maintenance Manual from manufacturer for the product.
- 1.4.5 Contractor shall provide calibration certificates for each meter installed, referencing the meter serial number, date of calibration, and documentation of tester.

- 1.4.6 Manufacturer's warranty: shall be for a period of two years from date of acceptance by the County Project Manager. The warranty shall cover all parts and equipment as well as ancillary parts and workmanship.

1.5 DELIVERY, STORAGE, AND HANDLING

- 1.5.1 Packaging of the system shall be in accordance with the following requirements:

1.5.1.1 All items to be installed shall be wrapped and placed in suitable shipping containers with sufficient cushioning material to prevent damage during shipment and storage.

1.5.1.2 Acceptance at the Site:

1.5.1.2.1 Products arriving at the site shall be examined for general damage during shipping. Those products found to be damaged shall not be accepted.

- 1.5.2 Storage and Protection:

1.5.2.1 Components shall be stored according to manufacturer's requirements for storage, if information regarding storage is provided by the manufacturer.

1.5.2.2 In cases where specific storage requirements are not provided, components shall be stored in a clean, dry area, protected from the weather, until required for installation.

2 PRODUCTS

2.1 MANUFACTURERS/SUPPLIERS

- 2.2.1 Badger Meter High Resolution 9-digit HR-LCD encoder/register, or equal.

- 2.2.2 The flow meter register shall have the following characteristics.

2.2.2.1 Shall be compatible with existing Badger Meter Recordall Cold Water Thermoplastic Disc Meter currently installed at each well.

2.2.2.2 Shall be high-resolution, 9-digit LCD, fully electronic encoder that is solid-state construction and is field programmable.

2.2.2.3 Field programming must include unit of measure, meter type and model, digit resolution from encoder, rate of flow time and units.

2.2.2.4 Standard pulse output from encoder must be nine-digit.

2.2.2.5 Shall provide unit of measure, at a minimum, in U.S. gallons and cubic feet.

2.2.2.6 Shall provide flow rate in seconds, minutes, and hours.

2.2.2.7 Must be capable of operation in a 100% humidity condition.

- 2.2.3 The flow meter register must have the following construction characteristics.

2.2.3.1 Shall meet, at a minimum, AWWA Standards C706 and C707.

2.2.3.2 Enclosure must be fully-encapsulated, weatherproof, and UV-resistant.

2.2.3.3 Instrument must be sealed to withstand a flooded condition.

3 EXECUTION

3.1 INSTALLATION

- 3.1.1 The Contractor shall install the flow meter recorder, associated instrumentation and associated appurtenances in accordance with the manufacturer's recommendations and as approved by the County Project Manager.
- 3.1.2 The Contractor shall install all wiring and other accessories to enable communication between the flow meter register and each well panel I/O board associated with each well.
- 3.1.3 The Contractor will complete all necessary programming at the PLC to ensure that all flow meter register data is transmitted, received, and properly managed.
- 3.1.4 The CONTRACTOR shall install the equipment specified in such a manner to ensure complete system integration and operational requirements are met.

3.2 SYSTEM START-UP SERVICES

- 3.2.1 The manufacturer shall provide one qualified service representative to inspect the complete installation at each well under the supervision of the Contractor to insure that the installation is completed in accordance with manufacturer's recommendations and guidance.
- 3.2.2 The manufacturer's representative will also ensure that all communication and information provided with each flow meter recorder is accurate and meets project requirements. Any necessary adjustments will be implemented to ensure trouble-free operation.
- 3.2.3 The manufacturer's representative will provide training on the use and operations/maintenance of the flow meter registers to the Contractor as well as the County Project Manager prior to acceptance.

END OF SECTION 13420

EXHIBIT I**HOWARD COUNTY, MARYLAND
AGREEMENT****PA XX-XXXX**

THIS AGREEMENT (the "Agreement") is made by and between **HOWARD COUNTY, MARYLAND**, a body corporate and politic, (the "County") and **[NAME AND ADDRESS OF CONTRACTOR]**, Federal Employer Identification Number XXXXXXXXX, Telephone Number XXX-XXX-XXXX (the "Contractor").

WHEREAS, the said Contractor, in consideration of the payments hereinafter specified and agreed to be made by said County, hereby covenants and agrees to [perform all services and/or provide all goods], in strict and entire conformity with the Attachment A entitled, ["Services to be Performed" and/or "Goods To Be Provided"], any Purchase Order subsequently issued, the [Invitation for Bids / Request for Proposals] No. _____ IFB/RFP TITLE, the Contractor's response [, the Best and Final Offer dated _____, if applicable] and any amendments or revisions thereto (collectively, the "Bid/Proposal"), incorporated herein either by reference or attachment, as applicable.

NOW THEREFORE, in consideration of the mutual promises and covenants, the parties hereto agree that the County shall pay the Contractor, an amount as set forth herein, for [services rendered and/or goods provided] in accordance with this Agreement, the other attachments hereto, the [Bid/Proposal], and the Purchase Order, all of which are hereby incorporated into and made a part of this Agreement. Notwithstanding any other terms or provisions of this Agreement, in the event the County is temporarily or permanently prevented, restricted or delayed in the performance of any or all of the duties and obligations imposed upon or assumed by it hereunder, by act of the General Assembly of Maryland or the Howard County Council, by a court of competent jurisdiction or by administrative delay not due to the fault of the County (and its members and agents), the County shall not be liable directly or indirectly for any claims caused to or suffered by the Contractor or any other person in connection with or as a result of such prevention, restriction or delay. In addition the parties hereto agree as follows:

1. Contractor's Duties.

The Contractor shall be an independent Contractor and not an employee of the County and the Contractor's employees who are assigned to provide services to the County under this Agreement shall be employees of the Contractor and not the County. The Contractor shall be responsible for the reporting and remittance of all state and federal taxes, compensable workers' compensation claims and coverage of unemployment claims filed by its employees. The Contractor shall [perform the services and/or provide the goods] outlined in Attachment A hereto. The Contractor's [services and/or goods] will be provided with due care and in accordance with all applicable standards. The Contractor shall [perform the services and/or provide the goods] for the Director of the Department of _____ of the County, or Designee, who shall have authority to administer the Agreement.

2. Compensation.

2.1 In consideration of the [services and/or goods] to be provided by the Contractor, the County shall pay the Contractor

[These may be modified to fit a particular contract; they are just starting points for sample contract language]

- in accordance with the unit prices set forth in the [Bid] [Proposal] [Best and Final Offer].

- in accordance with the [fee schedule] [unit prices] attached hereto as Attachment A. (*or some other attachment – B, C, D, etc.*)
- the sum of _____ Dollars (\$_____) (*This one is usually used for firm fixed price contracts with a lump sum, one time payment.*)
- an hourly rate of \$_____ per hour for an approximate total of ____ hours and shall reimburse the Contractor for eligible expenses incurred by the Contractor in the performance of the Contractor’s responsibilities and obligation under this Agreement. The eligible expenses are set forth in Attachment A.
- an amount equal to 90% of the amount invoiced pursuant to Paragraph 2.2 below. Ten percent (10%) of each disbursement shall be retained by the County and disbursed in a lump sum upon [completion of the services described herein][delivery of the goods described herein] in a manner satisfactory to the County, in its sole discretion. (*This one is usually used for software purchases when you want to include retainage.*)

2.2 Select one:

- In no event shall the compensation paid to the Contractor exceed the sum of _____ Dollars (\$_____)

Select one of the following options:

- in any contract year.
- during the Initial Term of this Agreement, as defined below,
- or during any renewal period.
- during the entire term of this Agreement, including renewals thereof.
- In no event shall the compensation paid to the Contractor exceed the budget appropriation during the term of this Agreement, including renewals thereof,

[DELETE IF NOT APPLICABLE:] provided, however, that the County may entertain a request for [escalation/adjustment] in any year subsequent to the first year in accordance with

Select one:

- Section ____, Paragraph ____ of the solicitation.
- Paragraph ____ of this Agreement.

2.3 Price Adjustment: [USE THIS IF A SOLE SOURCE AND PRICE ADJUSTMENT WILL BE PERMITTED: Prices offered shall be firm against any increase for [number of years spelled out] year(s) from the effective date of this Agreement. Prior to the commencement of subsequent renewal periods, it shall be the Contractor’s responsibility to notify the County Office of Purchasing in advance of any requested price adjustments.

2.3.1 The County will entertain requests for escalation in accordance with the current Consumer Price Index at the time of the request or up to a maximum 5% increase on the current pricing, whichever is lower. (*For purposes of this section, “Consumer Price Index” shall be the Consumer Price Index-All Urban Consumers (CPI-U), Washington-Baltimore, DC-MD-VA-WV, All Items, Not Seasonally Adjusted, as published by the United States Department of Labor, Bureau of Labor Statistics.*) The County reserves the right to grant or deny the request for a price increase and will do so in writing. If the price increase is approved, the price increase will be effective upon written approval and will remain firm through the renewal period.

2.3.2 If a price increase is requested following Agreement renewal and it has been longer than one year since the last increase, the County may entertain a request for escalation if it is in the County’s best interest. If the price increase is granted, the price increase will be effective upon approval and will remain firm through the renewal period, or for one year, at the County’s sole discretion.

2.2 [Renumber if necessary] The Contractor shall submit invoices to the County [SELECT ONE OF THE FOLLOWING OPTIONS: [monthly] [quarterly] [insert another time period for submission of invoices]. The Contractor's invoices shall reflect the:

- 2.2.1 Contractor's name
- 2.2.2 Address
- 2.2.3 Federal tax identification number
- 2.2.4 Contract number, (the first two digits are 44XXXXXXXX)
- 2.2.5 Purchase Order number the first two digits are 2XXXXXXXX)
- 2.2.6 Contract line number
- 2.2.7 Unit price and extended price (the unit price must match a contract line)
- 2.2.8 Description of goods provided and/or services performed

2.3 The proper form of County invoices requires that the information above be included on all invoices.

2.4 All invoices shall be submitted to Department name and address. Invoices in the proper form and approved by the County shall be paid by the County within 30 days of receipt thereof.

2.5 Invoices may be returned for correction. The County reserves the right to approve such invoices, in its sole discretion, and to request such detail and additional information as the County, in its discretion deems appropriate.

3. Term.

3.1 This Agreement shall be effective

Select one of the following options:

- _____, 20____ [Insert Date – spelled out]
- when it has been properly signed by all parties hereto
- when executed by the County

and shall continue through [Insert Date – spelled out] (hereinafter defined as the "Initial Term") [, at which time the County may exercise its option to renew set forth in Paragraph 3.2 below], unless sooner terminated pursuant to Paragraphs 5 and 7 hereof. [Insert for true requirements contract when more than 12 months – This Agreement is a requirements contract (indefinite delivery indefinite quantity contract) and does not require the payment of funds from appropriations of a later fiscal year.]

3.2 The County reserves the right to renew this Agreement for [insert renewal period] on the same terms and conditions set forth herein. [INSERT ANY CHANGES TO THE TERMS, i.e. COMPENSATION, UPON RENEWAL OF AGREEMENT, OTHERWISE, IT MUST BE RENEWED ON THE SAME TERMS AND CONDITIONS] Unless set forth in a written amendment, the compensation [, reimbursement] and manner of payment set forth in Paragraph 2 shall remain as is. In the event any renewal changes the terms and conditions set forth herein, the approval of the Howard County Council may be required.

4. Contractor's Representations and Warranties. The Contractor hereby represents the following:

4.1 [USE FOR CORPORATIONS, LIMITED OR GENERAL PARTNERSHIPS OR LIMITED LIABILITY COMPANIES; DELETE IF CONTRACTOR IS AN INDIVIDUAL] The Contractor is a [corporation][limited partnership][general partnership][limited liability company], duly formed and validly existing under the laws of the State of

[INSERT STATE OF INCORPORATION] and is qualified to do business and is in good standing [and licensed] in the State of Maryland.

4.2 [USE FOR CORPORATIONS, LIMITED OR GENERAL PARTNERSHIPS OR LIMITED LIABILITY COMPANIES; DELETE IF CONTRACTOR IS AN INDIVIDUAL] The Contractor has the power and authority to consummate the obligations and responsibilities contemplated hereby, and has taken all necessary action to authorize the execution, delivery and performance required under this Agreement.

4.3 The person executing this Agreement for the Contractor warrants that he/she is duly authorized by the Contractor to execute this Agreement on the Contractor's behalf.

4.4 SELECT ONE OF THE FOLLOWING OPTIONS: A. [The services to be provided under this Agreement shall be performed competently and with due care, and in accordance with all applicable laws, codes, ordinances and regulations and licensing requirements.] OR B. [The goods to be delivered shall comply with the implied warranties of merchantability and fitness for use, and all express warranties created by this Agreement.]

4.5 The Contractor has obtained and shall continue to maintain, at its own cost, such licenses and certifications as are necessary to provide the services rendered under this Agreement, and shall present such licenses to the County upon its request for the same.

4.6 All representations and warranties made in the Affidavit [and the Bid/Proposal response] remain true and correct in all respects.

5. Termination:

5.1 Termination for Convenience: The County may terminate this Agreement for convenience, in whole or in part, whenever the County determines that such termination is in the best interest of the County, without showing cause, upon giving at least 30 days written notice to the Contractor. The County shall pay all reasonable costs incurred by the Contractor up to the date of termination. However, in no event shall the Contractor be paid an amount which exceeds the price bid for the work performed. The Contractor shall not be reimbursed for any profits which may have been anticipated but which have not been earned up to the date of termination.

5.2 Termination for Default: When the Contractor has not performed or has unsatisfactorily performed one or more material terms of the Agreement and therefore is in default, the County may terminate the Agreement for default. Upon termination for default, payment may be withheld at the discretion of the County. Failure on the part of a Contractor to fulfill the contractual obligations shall be considered just cause for termination of the Agreement. If the damages exceed the undisbursed sums available for compensation, the County shall not be obligated to make any further disbursements hereunder. The Contractor will be paid for work satisfactorily performed prior to termination less any excess costs incurred by the County in reprocurring and completing the work.

6. Remedies for Default.

6.1 The County shall have the right upon the happening of any Default, without providing notice to the Contractor:

6.1.1. In addition to other available rights and remedies, to terminate this Agreement immediately, in whole or in part;

6.1.2. To suspend the Contractor's authority to receive any undisbursed funds; and/or

6.1.3. To proceed at any time or from time to time to protect and enforce all rights and remedies available to the County, by suit or any other appropriate proceedings, whether for specific performance of any covenant, term or condition set forth in this Agreement, or for damages or other relief, or proceed to take any action authorized or permitted under applicable law or regulations.

6.2 Upon termination of this Agreement for default, the County may elect to pay the Contractor for [services provided] [goods delivered] up to the date of termination, less the amount of damages caused by the default. If the damages exceed the undisbursed sums available for compensation, the County shall not be obligated to make any further disbursements hereunder.

7. Remedies Cumulative and Concurrent.

No remedy herein conferred upon or reserved to the County is intended to be exclusive of any other remedies provided for in this Agreement, and each and every such remedy shall be cumulative, and shall be in addition to every other remedy given hereunder, or under this Agreement, or now or hereafter existing at law or in equity or by statute. Every right, power and remedy given to the County shall be concurrent and may be pursued separately, successively or together against the Contractor, and every right, power and remedy given to the County may be exercised from time to time as often as may be deemed expedient by the County.

8. Insurance.

The Contractor shall be required to provide insurance required by the County pursuant to the insurance requirements specified in Section D of the [Invitation for Bid / Request for Proposal], including naming “Howard County, Maryland, its officials, employees, agents and volunteers” as Certificate Holder and as Additional Insured. The Contractor shall maintain the insurance coverages required by the County while this Agreement is in force, and provide documentation of such insurance in a form satisfactory to the County. Such documentation may, in the discretion of the County, be in the form of binders or declarations from the insurance company.

9. Confidential Information.

The Contractor shall not disclose any documentation and information disclosed to the Contractor in the course of its performance of duties hereunder with respect to the past, present and future County business, services and clients without the express written consent of the County.

10. Ethics.

10.1 The Contractor certifies that the officer of the legal entity who is executing this Agreement has read and understands Attachment B, entitled Howard County Charter and Code References to Ethics, which contains the provisions of Section 901(a) of the Howard County Charter dealing with conflicts of interest and Section 22.204 of the Howard County Code dealing with conflicts of interest.

10.2. The Contractor certifies that it has (1) not been a party to an agreement to bid a fixed or uniform price; (2) not offered nor will offer any gratuity to any county official or employee; and (3) not violated any of the fair employment provisions of Code Sec. 4.119 Ethics and Fair Employment Practices detailed in Attachment B.

11. Assignment.

Neither the County nor the Contractor shall assign or transfer its interest or obligations under this Agreement to any third party, without the written consent of the other. Nothing herein shall be construed to create any personal or individual

liability upon any employee, officer or elected official of the County, nor shall this Agreement be construed to create any rights hereunder in any person or entity other than the parties of this Agreement.

12. Delegation of Duties.

The Contractor shall not delegate the Contractor's duties under this Agreement without the prior written consent of the County.

13. Indemnification.

13.1 The Contractor shall indemnify and hold harmless the County, its employees, agents and officials from any and all claims, suits, or demands including reasonable attorney fees which may be made against the County, its employees, agents or officials resulting from any act or omission committed in the performance of the duties imposed by and performed under the terms of this Agreement by the Contractor or anyone under agreement with the Contractor to perform duties under this Agreement. The Contractor shall not be responsible for acts of negligence or willful misconduct committed by the County, its employees, agents and officials.

13.2 Any property or work to be provided by the Contractor under this Agreement will remain at the Contractor's risk until written acceptance by the County; and the Contractor will replace, at the Contractor's expense, all property or work damaged or destroyed by any cause whatsoever.

13.3 In the event that there is a conflict between the indemnification provision set forth in the Purchase Order Terms and Conditions and/or the General Conditions of the solicitation and/or this Agreement, the terms set forth in the Agreement shall govern.

14. Integration and Modification.

This Agreement sets forth the entire agreement between the parties relative to the subject matter hereof. No representation, promise or condition, whether oral or written, not incorporated herein shall be binding upon either party to this Agreement. No waiver, modification or amendment of the terms of this Agreement shall be effective unless made in writing and signed by an authorized representative(s) of all parties to this Agreement.

15. Governing Law.

This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland without regard to any choice of law principles that would dictate the laws of any other jurisdiction. The parties agree that the exclusive venue for any and all actions related hereto shall be the appropriate Federal or State court located within the State of Maryland.

16. Conflicting Terms.

16.1 The Contractor acknowledges that any Purchase Order issued on or after the effective date of this Agreement is hereby integrated and made a part of this Agreement, provided, however that if a conflict arises between the provisions of this Agreement and the Purchase Order, the provisions of this Agreement shall prevail.

16.2 In the event of a conflict between the [Bid/Proposal] and this Agreement, the provisions of this Agreement (without the conflicting terms in the Bid/Proposal) shall prevail.

17. Severability.

If any of the provisions in this Agreement are declared by a court or other lawful authority to be unenforceable or invalid for any reason the remaining provisions hereof shall not be affected thereby and shall remain enforceable to the full extent permitted by law.

18. Time is of the Essence.

Time is of the essence with respect to performance of the terms and conditions of this Agreement.

19. Funding.

The contractual obligation of the County under this Agreement is contingent upon the availability of appropriated funds from which payment for this Agreement can be made.

[DELETE IF NOT APPLICABLE:] 20. Ownership of Goods.

All finished or unfinished work, reports, or goods that are the subject of this Agreement [DELETE IF NOT APPLICABLE:] including any licenses or consents acquired by the Contractor for performance hereunder,] shall be and shall remain the property of the County.]

21. Notice.

Any notice required to be delivered shall be deemed to have been received when the notice has been sent by certified mail, return receipt, overnight carrier, or hand delivered, and there is written confirmation of delivery or refusal of receipt, to the following address and individual or at such other address and/or such other individual a party may identify in writing to the other party:

[Make it a sentence or column, depending on space available]

FOR THE COUNTY:

_____, Buyer; Howard County, Maryland; Office of Purchasing; 6751 Columbia Gateway Drive, Suite 501; Columbia, Maryland 21046; Telephone: 410-313-XXXX; Fax: 410-313-6388; Email: name@howardcountymd.gov.

FOR THE CONTRACTOR:

Contact Name, Title; Company address; Telephone;; Fax;; Email: _____.

[DELETE IF NOT APPLICABLE: 22. HIPAA. Compliance With Federal HIPAA And State Confidentiality Law.

A. The Contractor acknowledges its duty to become familiar with and comply, to the extent applicable, with all requirements of the federal Health Insurance Portability and Accountability Act (HIPAA), 42 U.S.C. §§ 1320 *et seq.* and implementing regulations including 45 CFR Parts 160 and 164. The Contractor also agrees to comply with the Maryland Confidentiality of Medical Records Act (Md. Code Ann. Health-General §§4-301 *et seq.*, MCMRA). This obligation includes:

1. As necessary, adhering to the privacy and security requirements for protected health information and medical records under federal HIPAA and State MCMRA and making the transmission of all electronic information compatible with the federal HIPAA requirements; and

2. Providing good management practices regarding all health information and medical records.

B. [If the County determines that functions to be performed constitute business associate functions as defined in HIPAA, the Contractor must execute a business associate agreement as required by HIPAA regulations at 45 CFR §164.501. The fully executed business associate agreement must be submitted within 10 working days after notification of selection, or within 10 days after award, whichever is earlier. Upon expiration of the ten-day submission period, if the County determines that the Contractor has not provided the HIPAA agreement required by this solicitation, the Purchasing Agent, upon review of the Howard County Office of Law, may withdraw the recommendation for award and make the award to the next qualified contractor.] **OR**

[The County has determined that the functions to be performed constitute business associate functions as defined in HIPAA, the Contractor must agree to the Business Associate Agreement, attached hereto and incorporated herein as Attachment __, as required by HIPAA regulations at 45 CFR §164.501.]

C. Protected Health Information as defined in the HIPAA regulations at 45 CFR 160.103 and 164.501, as amended from time to time, means information transmitted as defined in the regulations, that is individually identifiable; that is created or received by a healthcare provider, health plan, public health authority, employer, life insurer, school or university, or healthcare clearinghouse; and that is related to the past, present, or future physical or mental health or condition of an individual, to the provision of healthcare to an individual, or to the past, present, or future payment for the provision of healthcare to an individual. The definition excludes certain education records as well as employment records held by a covered entity in its role as employer.

23. No Waiver, Etc.

No failure or delay by the County to insist upon the strict performance of any term, condition or covenant of this Agreement, or to exercise any right, power, or remedy consequent upon a breach thereof, shall constitute a waiver of any such term, condition, or covenant or of any such breach, or preclude the County from exercising any such right, power, or remedy at any later time or times.

24. Reports, Audits, Inspections.

24.1 At any time during normal business hours and as often as the County may deem necessary, the Contractor shall make available to and permit inspection and copying by the County, its employees or agents, of all records, information and documentation of the Contractor related to the subject matter of this Agreement, including, but not limited to, all contracts, invoices, payroll, and financial audits. The Contractor shall retain all records, information and documentation of the Contractor related to this Agreement, including, but not limited to, all contracts, invoices, payroll, and financial audits for at least three (3) years after the termination of this Agreement.

24.2 All invoices submitted to the County are subject to audit by the County.

24.3 The County may request the Contractor, at the expense of the Contractor, to have performed an independent audit of the Contractor's financial information, including, but not limited to, balance sheets, statement of revenue and expenses, and receipts and disbursements.

25. Wage Rate Requirements.

The Contractor certifies that the officer of the corporation who is executing this Agreement has read and understands the wage rate section in the Request for Proposals (reference Howard County Code, Sec. 4.122A Wage Requirements).

SIGNATURES BEGIN ON NEXT PAGE

IN WITNESS WHEREOF, the parties have executed this Agreement PA XX-XXXX.

WITNESS: [INSERT LEGAL NAME OF CONTRACTOR]

Signature _____ By: _____
Print Name: _____ [Insert Name]
[Insert Title]

WITNESS: HOWARD COUNTY, MARYLAND,
a body corporate and politic

By: _____
Lonnie R. Robbins Chief Administrative Officer
Allan H. Kittleman
County Executive
[Purchasing Agent for Howard County Health
Department, remove if not applicable]

APPROVED FOR LEGAL SUFFICIENCY
this _____ day of _____, 2016:

INFORMATION TECHNOLOGY APPROVED:

Gary W. Kuc
County Solicitor

Christopher Merdon (IF APPLICABLE)
Chief Information Officer
Technology & Communication Services

REVIEWING ATTORNEY:

Type Name: _____
Title: _____

APPROVED FOR SUFFICIENCY OF
FUNDS:

DEPARTMENT APPROVED:

Stanley J. Milesky
Director of Finance

[Insert Dept. Head Name]
[Director of Insert Department (i.e. Public Works)]

ATTACHMENT A

SERVICES TO BE PERFORMED [AND/OR] GOODS TO BE DELIVERED

Contract-specification information begins here. Indent the paragraphs and use 1.5 spacing to match the agreement – unless you are trying to keep a couple of sentences from going to a second page, then you may consider single spacing.

Note: There is only one space between the end of the description of the contract-specific information and the last sentence below. Do not leave multiple spaces.

The above are in addition to any other services set forth in the Bid/Proposal.

sample

ATTACHMENT B**HOWARD COUNTY CHARTER AND CODE REFERENCES TO ETHICS*****Charter Section 901. Conflict of Interest.***

(a) **Prohibitions.** No officer or employee of the County, whether elected or appointed, shall in any manner whatsoever be interested in or receive any benefit from the profits or emoluments of any contract, job, work, or service for the County. No such officer or employee shall accept any service or thing of value, directly or indirectly, from any person, firm or corporation having dealings with the County, upon more favorable terms than those granted to the public generally, nor shall he receive, directly or indirectly, any part of any fee, commission or other compensation paid or payable by the County, or by any person in connection with any dealings with the County, or by any person in connection with any dealings with or proceedings before any branch, office, department, board, commission or other agency of the County. No such officer or employee shall directly or indirectly be the broker or agent who procures or receives any compensation in connection with the procurement of any type of bonds for County officers, employees or persons or firms doing business with the County. No such officer or employee shall solicit or accept any compensation or gratuity in the form of money or otherwise for any act or omission in the course of his public work; provided, however, that the head of any department or board of the County may permit an employee to receive a reward publicly offered and paid for, for the accomplishment of a particular task.

(b) **Rules of construction; exceptions by Council.** The provisions of this Section shall be broadly construed and strictly enforced for the purpose of preventing officers and employees from securing any pecuniary advantages, however indirect, from their public associations, other than their compensation provided by law.

In order, however, to guard against injustice, the Council may, by resolution, specifically authorize any County officer or employee to own stock in any corporation or to maintain a business in connection with any person, firm or corporation dealing with the County, if, on full public disclosure of all pertinent facts to the County Council by such officer or employee, the Council shall determine that such stock ownership or connection does not violate the public interest.

The County Council may, by ordinance, delegate to the Howard County Ethics Commission the power to make such determinations and to authorize the ownership or connection. Any ordinance which delegates this power shall provide for procedures including a public hearing, and shall establish criteria for determining when the ownership or connection does not violate the public interest.

(c) **Penalties.** Any officer or employee of the County who willfully violates any of the provisions of this Section shall forfeit his office. If any person shall offer, pay, refund or rebate any part of any fee, commission, or other form of compensation to any officer or employee of the County in connection with any County business or proceeding, he shall, on conviction, be punishable by imprisonment for not less than one or more than six months or a fine of not less than \$100.00 or more than \$1,000.00, or both. Any contract made in violation of this Section may be declared void by the Executive or by resolution of the Council. The penalties in this Section shall be in addition to all other penalties provided by law.

Code Section 4.119. Ethics and Fair Employment Practices.

(a) **Conflict of Interest.** Bidders, vendors, purchasers and county employees involved in the purchasing process shall be governed by the provisions of the Howard County Charter and Howard County law regarding conflict of interest. No vendor shall offer a gratuity to an official or employee of the county. No official or employee shall accept or solicit a gratuity.

(b) Discouragement of Uniform Bidding.

(1) It is the policy of the county to discourage uniform bidding by every possible means and to endeavor to obtain full and open competition on all purchases and sales.

(2) No bidder may be a party with other bidders to an agreement to bid a fixed or uniform price.

(3) No person may disclose to another bidder, nor may a bidder acquire, prior to the opening of bids, the terms and conditions of a bid submitted by a competitor.

(c) Fair Employment Practices

(1) Bidders, vendors and purchases may not engage in unlawful employment practices as set forth in Subtitle 2 "Human Rights" of Title 12 of the Howard County Code, Subtitle 6 of Title 20 of the State Government Article, Annotated Code of Maryland or Sections 703 and 704 of Title VII of the Civil Rights Act of 1964 as amended. Should any bidders, vendors or purchasers engage in such unlawful employment practices, they shall be subject to being declared irresponsible or being debarred pursuant to the provisions of this subtitle.

(2) The Howard County Office of Human Rights shall notify the county purchasing agent when any bidder is found, by a court of competent jurisdiction, to have engaged in any high unlawful employment practices.

(3) If any bidder has been declared to be an irresponsible bidder for having engaged in an unlawful employment practice and has been debarred from bidding pursuant to this subtitle, the Howard County Office of Human Rights shall review the employment practices of such bidder after the period of debarment has expired to determine if violations have been corrected and shall, within 30 days, file a report with the county purchasing agent informing the agent of such corrections before such bidder can be declared to be a responsible bidder by the County Purchasing agent.

(4) Payment of subcontractors. All contractors shall certify in writing that timely payments have been made to all subcontractors supplying labor and materials in accordance with the contractual arrangements made between the contractor and the subcontractors. No contractor will be paid a second or subsequent progress payment or final payment until such written certification is presented to the county purchasing agent.

Code Section 22.204. - Prohibited Conduct and Interests.

(a) **Participation Prohibitions.**

(1) Except as permitted by Commission regulation or opinion, an official or employee may not participate in:

(i) Except in the exercise of an administrative or ministerial duty that does not affect the disposition or decision of the matter, any matter in which, to the knowledge of the official or employee, the official or employee or a qualified relative of the official or employee has an interest.

(ii) Except in the exercise of an administrative or ministerial duty that does not affect the disposition or decision with respect to the matter, any matter in which any of the following is a party:

a. A business entity in which the official or employee has a direct financial interest of which the official or employee may reasonably be expected to know;

b. A business entity for which the official, employee, or a qualified relative of the official or employee is an officer, director, trustee, partner, or employee;

c. A business entity with which the official or employee or, to the knowledge of the official or employee, a qualified relative is negotiating or has any arrangement concerning prospective employment;

d. If the contract reasonably could be expected to result in a conflict between the private interests of the official or employee and the official duties of the official or employee, a business entity that is a party to an existing contract with the official or employee, or which, to the knowledge of the official or employee, is a party to a contract with a qualified relative;

e. An entity, doing business with the County, in which a direct financial interest is owned by another entity in which the official or employee has a direct financial interest, if the official or employee may be reasonably expected to know of both direct financial interests; or

f. A business entity that:

1. The official or employee knows is a creditor or obligee of the official or employee or a qualified relative of the official or employee with respect to a thing of economic value; and

2. As a creditor or obligee, is in a position to directly and substantially affect the interest of the official or employee or a qualified relative of the official or employee.

(2) A person who is disqualified from participating under paragraph 1. of this subsection shall disclose the nature and circumstances of the conflict and may participate or act if:

(i) The disqualification leaves a body with less than a quorum capable of acting;

(ii) The disqualified official or employee is required by law to act; or

(iii) The disqualified official or employee is the only person authorized to act.

(3) The prohibitions of paragraph 1 of this subsection do not apply if participation is allowed by regulation or opinion of the Commission.

(b) **Employment and Financial Interest Restrictions.**

(1) Except as permitted by regulation of the commission when the interest is disclosed or when the employment does not create a conflict of interest or appearance of conflict, an official or employee may not:

(i) Be employed by or have a financial interest in any entity:

a. Subject to the authority of the official or employee or the County agency, board, commission with which the official or employee is affiliated; or

b. That is negotiating or has entered a contract with the agency, board, or commission with which the official or employee is affiliated; or

(ii) Hold any other employment relationship that would impair the impartiality or independence of judgment of the official or employee.

(2) The prohibitions of paragraph (1) of this subsection do not apply to:

(i) An official or employee who is appointed to a regulatory or licensing authority pursuant to a statutory requirement that persons subject to the jurisdiction of the authority be represented in appointments to the authority;

(ii) Subject to other provisions of law, a member of a board or commission in regard to a financial interest or employment held at the time of appointment, provided the financial interest or employment is publicly disclosed to the appointing authority and the Commission;

(iii) An official or employee whose duties are ministerial, if the private employment or financial interest does not create a conflict of interest or the appearance of a conflict of interest, as permitted and in accordance with regulations adopted by the Commission; or

(iv) Employment or financial interests allowed by regulation of the Commission if the employment does not create a conflict of interest or the appearance of a conflict of interest or the financial interest is disclosed.

(c) **Post-Employment Limitations and Restrictions.**

(1) A former official or employee may not assist or represent any party other than the County for compensation in a case, contract, or other specific matter involving the County if that matter is one in which the former official or employee significantly participated as an official or employee.

(2) For a year after the former member leaves office, a former member of the County Council may not assist or represent another party for compensation in a matter that is the subject of legislative action.

(d) **Contingent Compensation.** Except in a judicial or quasi-judicial proceeding, an official or employee may not assist or represent a party for contingent compensation in any matter before or involving the County.

(e) **Use of Prestige of Office.**

(1) An official or employee may not intentionally use the prestige of office or public position for the private gain of that official or employee or the private gain of another.

(2) This subsection does not prohibit the performance of usual and customary constituent services by an elected official without additional compensation.

(f) **Solicitation and Acceptance of Gifts.**

(1) An official or employee may not solicit any gift.

(2) An official or employee may not directly solicit or facilitate the solicitation of a gift, on behalf of another person, from an individual regulated lobbyist.

(3) An official or employee may not knowingly accept a gift, directly or indirectly, from a person that the official or employee knows or has the reason to know:

(i) Is doing business with or seeking to do business with the County office, agency, board or commission with which the official or employee is affiliated;

(ii) Has financial interests that may be substantially and materially affected, in a manner distinguishable from the public generally, by the performance or nonperformance of the official duties of the official or employee;

(iii) Is engaged in an activity regulated or controlled by the official's or employee's governmental unit; or

(iv) Is a lobbyist with respect to matters within the jurisdiction of the official or employee.

(4) (i) Subsection (4)(ii) does not apply to a gift:
 a. That would tend to impair the impartiality and the independence of judgment of the official or employee receiving the gift;
 b. Of significant value that would give the appearance of impairing the impartiality and independence of judgment of the official or employee; or
 c. Of significant value that the recipient official or employee believes or has reason to believe is designed to impair the impartiality and independence of judgment of the official or employee.

(ii) Notwithstanding paragraph (3) of this subsection, an official or employee may accept the following:
 a. Meals and beverages consumed in the presence of the donor or sponsoring entity;
 b. Ceremonial gifts or awards that have insignificant monetary value;
 c. Unsolicited gifts of nominal value that do not exceed \$20.00 in cost or trivial items of informational value;
 d. Reasonable expenses for food, travel, lodging, and scheduled entertainment of the official or the employee at a meeting which is given in return for the participation of the official or employee in a panel or speaking engagement at the meeting;
 e. Gifts of tickets or free admission extended to an elected official to attend a charitable, cultural, or political event, if the purpose of this gift or admission is a courtesy or ceremony extended to the elected official's office;
 f. A specific gift or class of gifts that the Commission exempts from the operation of this subsection upon a finding, in writing, that acceptance of the gift or class of gifts would not be detrimental to the impartial conduct of the business of the County and that the gift is purely personal and private in nature;
 g. Gifts from a person related to the official or employee by blood or marriage, or any other individual who is a member of the household of the official or employee; or
 h. Honoraria for speaking to or participating in a meeting, provided that the offering of the honorarium is not related, in any way, to the official's or employee's official position.

(g) **Disclosure of Confidential Information.** Other than in the discharge of official duties, an official or employee may not disclose or use confidential information, that the official or employee acquired by reason of the official's or employee's public position and that is not available to the public, for the economic benefit of the official or employee or that of another person.

(h) **Participation in Procurement.**

(1) An individual or a person that employs an individual who assists a County, agency or unit in the drafting of specifications, an invitation for bids, or a request for proposals for a procurement, may not submit a bid or proposal for that procurement, or assist or represent another person, directly or indirectly, who is submitting a bid or proposal for the procurement.

(2) The Commission may establish exemptions from the requirements of this section for providing descriptive literature, sole source procurements, and written comments solicited by the procuring agency.

ATTACHMENT C**BUSINESS ASSOCIATE AGREEMENT**

This Business Associate Agreement [dated ____ day of _____, 201X (this date is needed when the BAA is NOT an Attachment to the Agreement)] is made between **HOWARD COUNTY, MARYLAND** [as Purchasing Agent For Howard County Health Department, remove if not applicable], a body corporate and politic, (the County), and **[NAME AND ADDRESS OF CONTRACTOR – ALL CAPS AND BOLD]** (the Contractor).

WHEREAS, pursuant to mandated compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), certain parties are required to enter into a Business Associate Agreement (the BAA).

NOW, THEREFORE, in consideration of the mutual promises contained herein and for other good and valuable consideration, including the mutual reliance of the parties on compliance with the terms and conditions of this BAA, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

I. PURPOSE AND SCOPE

A. The County and the Contractor enter into this BAA for the purpose of ensuring compliance with the requirements of HIPAA and its implementing regulations (45 CFR Parts 160 and 164) as either have been amended by Subtitle D of the Health Information Technology for Economic and Clinical Health Act (the "HITECH Act"), as Title XIII of Division A and Title IV of division B of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5), and the Maryland Confidentiality of Medical Records Act (MCMRA).

B. This BAA applies to the conduct of the Contractor in connection with protected health information anticipated to be provided to, collected, maintained or used by the Contractor in connection with its performance under the Primary Contract.

II. DEFINITIONS

A. The terms used in this BAA have the meanings set forth in the Privacy Rule, 45 CFR Parts 160 and 164, and as set forth in subsection B of this section.

B. As used in this BAA the following terms have the meanings indicated:

1. "County" means Howard County, Maryland.

2. "Designated Record Set" means a group of records maintained by or for the County that is (i) the medical records and billing records about individuals maintained by or for the County, (ii) the enrollment, payment, claims adjudication, and case or medical management record systems maintained by or for a health plan, or (iii) used, in whole or in part, by or for the County to make decisions about individuals. As used in this BAA, the term "record" means any item, collection, or grouping of information that includes protected health information and is maintained, collected, used, or disseminated by or for the County. (45 CFR §164.501.)

3. "Disclosure" means the release, transfer, provision of, access to, or divulging in any other manner of information outside the entity holding the information. (45 CFR §160.103.)

4. "HIPAA" means the Health Insurance Portability and Accountability Act of 1996 (the Social Security Act, 42 U.S.C. 1320a-7(c)(a)(5), and 1320d-2 and 1320d-4.)

5. "Individual" has the same meaning as the term "individual" in 45 CFR § 160.103 and includes a person who qualifies as a personal representative in accordance with 45 CFR §164.502(g).

6. "MCMRA" means the Maryland Confidentiality of Medical Records Act, Md. Code Ann., Health-Gen., §4-301, et seq.

7. "Privacy Rule" means the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Part 160 and Part 164, Subparts A and E.

8. "Protected health information" as defined in the Privacy Rule §§ 160.103 and 164.501, means information transmitted as defined in the regulations, that is individually identifiable; that is created or received by a healthcare provider, health plan, public health authority, employer, life insurer, school or university, or healthcare clearinghouse; and that is related to the past, present, or future physical or mental health or condition of an individual, to the provision of healthcare to an individual, or to the past, present, or future payment for the provision of healthcare to an individual. The definition excludes certain education records as well as employment records held by a covered entity in its role as employer. For purposes of this BAA, protected health information is limited to the information created or received by the Contractor from or on behalf of the County.

9. "Required by law" means a mandate contained in law that compels an entity to make use or disclosure of protected health information, that is enforceable in a court of law, and includes but is not limited to the itemized activities set forth in 45 CFR §164.501.

10. "Use" means, with respect to individually identifiable health information, the sharing, employment, application, utilization, examination, or analysis of such information within an entity that maintains such information. (45 CFR § 164.50 1.)

III. PERMITTED USES AND DISCLOSURES BY CONTRACTOR

A. The Contractor agrees to use or disclose protected health information only as permitted or required by the Privacy Rule, this BAA, or as otherwise required by law.

B. Except as otherwise provided in this Agreement, the Contractor may:

1. Use or disclose protected health information to perform functions, activities, or services for, or on behalf of, the County as specified in the Primary Contract, provided that the use or disclosure would comply with the Privacy Rule if done by the County, is consistent with the MCMRA, and complies with the County's privacy practices and procedures, if applicable.

2. Use protected health information for the proper management and administration of the Contractor or to carry out the legal responsibilities of the Contractor;

3. Disclose protected health information to a third party as necessary to carry out its obligations under the Primary Contract, for proper management and administration of the Contractor or to carry out the Contractor's legal responsibilities if:

a. the disclosure is required by law;

b. the Contractor obtains reasonable assurances from the third party to whom the information is disclosed that it will remain confidential and used or further disclosed only as required by law or for the purpose for which it was disclosed to the third party; and

c. the third party notifies the Contractor of any instances of which it is aware in which the confidentiality of the information has been breached; and

4. Use protected health information to provide data aggregation services to the County as permitted by 45 CFR § 164.504(e)(2)(i)(B).

C. The Contractor may use protected health information to report violations of law to appropriate Federal and State authorities, consistent with 45 CFR § 164.502(a)(1).

IV. CONTRACTOR REQUIREMENTS

A. The Contractor agrees to implement appropriate safeguards to prevent use or disclosure of the protected health information other than as provided in Section III of this Agreement, including:

1. Limiting the amount of protected health information used or disclosed pursuant to Section III of this BAA to the minimum necessary to carrying out the functions of the Primary Contract and to otherwise achieve the purposes of the use and disclosure;

2. Taking steps to protect the physical security of and prevent unauthorized access to the protected health information, furnishing the County with a written description of these steps, and allowing representatives of the County access to premises where the protected health information is maintained for the purpose of inspecting the physical security arrangements; and

3. Requiring each of its employees having involvement with protected health information to comply with applicable laws and regulations relating to confidentiality of protected health information, including the provisions of this BAA and the Maryland Confidentiality of Medical Records Act.

B. The Contractor agrees to:

1. Mitigate, to the extent practicable, any harmful effect that is known to Contractor, of a use or disclosure of protected health information by Contractor in violation of the requirements of this BAA;

2. Report to the County any use or disclosure of the protected health information not consistent with this BAA of which it becomes aware within five (5) days of the time it becomes aware of the use of disclosure;

3. Ensure that any agent, including a subcontractor, agrees to the same restrictions and conditions that apply to the Contractor with respect to any protected health information provided to the agent that is received from, or created or received by Contractor on behalf of the County;

4. Provide access, at the request of the County, and in the time and manner directed by the County, to protected health information in a designated record set maintained by the Contractor, to the County or, as directed by the County, to an individual in order to meet the requirements under 45 CFR § 164.524;

5. Make any amendment(s) to protected health information in a designated record set maintained by the Contractor that the County directs or agrees to pursuant to 45 CFR § 164.526 at the request of the County or an individual, and in the time and manner directed by the County;

6. Make available to the County, in a time and manner directed by the County or designated by it, any protected health information received from, or created or received by Contractor on behalf of the County, as well as any internal practices, books, and other records relating to the use and disclosure of protected health information, for purposes of determining the County's compliance with the Privacy Rule;

7. Document disclosures of protected health information and information related to such disclosures as would be required for the County to respond to a request by an individual for an accounting of disclosures of protected health information in accordance with 45 CFR § 164.528; and

8. Provide to the County or an individual, in time and manner directed by the County, information collected in accordance with subsection (7) of this section, to permit the County to respond to a request by an individual for an accounting of disclosures of protected health information in accordance with 45 CFR § 164.528.

C. Upon termination of the Primary Contract, the Contractor agrees that, except as provided in subsection V(C) of this BAA, all of the protected health information provided by the County to the Contractor, or created or received by the Contractor on behalf of the County pursuant to the Primary Contract will be destroyed or returned to the County.

V. TERM AND TERMINATION

A. This BAA shall be effective as of the date set forth [above OR in the Agreement]. It shall remain in effect unless otherwise terminated for the entire term of the Primary Contract including any extensions, options or modifications, or, as appropriate, in accordance with the requirements of paragraph (C) of this subsection.

B. Upon the County's knowledge of a material breach by Contractor, the County will either:
1. Provide an opportunity for the Contractor to cure the breach or end the violation and terminate this BAA for cause if the Contractor does not cure the breach or end the violation within the time specified by the County;
2. Immediately terminate this BAA for cause if the Contractor has breached a material term of this BAA and cure is not possible; or
3. If neither termination nor cure is feasible, report the violation to the County head.

C. Effect of Termination of this BAA.
1. Except as provided in paragraph 2 of this section, upon termination of this BAA for any reason, the Contractor shall return or document the destruction of all protected health information received from the County, or created or received by the Contractor on behalf of the County. This provision shall apply to protected health information that is in the possession of subcontractors or agents of the Contractor. The Contractor shall retain no copies of the protected health information.
2. If the Contractor believes that returning or destroying the protected health information is infeasible, the Contractor shall provide to the County notification of the conditions that make return or destruction unfeasible. If the County agrees that return or destruction of protected health information is unfeasible, the Contractor shall extend the protections of this BAA to the protected health information and limit further uses and disclosures of the protected health information to those purposes that make the return or destruction infeasible, for so long as the Contractor maintains the protected health information.

D. The County's termination of this BAA for cause pursuant to this subsection V may be viewed by the County as a breach of the Primary Contract and grounds for termination in accordance with the default termination clause of the Primary Contract.

VI. NOTICE [Delete this section if used as an Attachment to the Agreement since the notice provision is already in the Agreement.]

Any notice required or permitted under this BAA shall be in writing and hand delivered with receipt obtained therefore, or mailed, postage pre-paid, to the other parties by certified mail, return receipt requested to the following:

<p>FOR THE SERVICE PROVIDER</p> <p>Name</p> <p>Title</p> <p>Company Name</p> <p>Address</p> <p>City, State, Zip Code</p>	<p>FOR THE COUNTY</p> <p>Name</p> <p>Title</p> <p>Department/Office</p> <p>Address</p> <p>City, State, Zip Code</p>
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VII. MISCELLANEOUS

A. A reference in this BAA to a section in the Privacy Rule means the section in effect at time of execution and as amended from time to time thereafter.

B. The parties agree to take such action to amend this BAA from time to time as is necessary for the County to

comply with the requirements of the Privacy Rule and HIPAA.

C. The respective rights and obligations of the Contractor under Section V(C) of this BAA shall survive the termination of this BAA.

D. Any ambiguity in this BAA shall be resolved to permit the County to comply with the Privacy Rule.

E. The parties agree that this BAA shall not be assignable, except by written approval, in advance, by the County.

VIII. COMPLIANCE WITH STATE LAW

The Contractor acknowledges that by accepting the protected health information from the County, it becomes a holder of medical records information under the Maryland Confidentiality of Medical Records Act (Md. Code Ann., Health-Gen. §§4-301 et. seq.) and is subject to the provisions of that law. If the HIPAA Privacy Rule and the MCMRA conflict regarding the degree of protection provided for protected health information, the Contractor shall comply with the more restrictive protection requirement.

EXHIBIT II
SAMPLE INVOICE

SAMPLE INVOICE

Your Company's Name

Address

[Email address](#)

Telephone/Fax Nos.

Mail Invoice To:

Howard County Government
Department/Office Name
Address (From the Purchase Order)
Address

Invoice No.:

Date:

FEIN:

Contract #: 44XXXXXXXXX
Purchase Order #: 2XXXXXXXXXX

Performance Period: __/__/13-__/__/14
(For Services)

Contract Line #	PO Item #	Goods/Services Description	List Price	% Discount	Net Price	Quantity	Extended Price
Total							

Payment Terms:

Please make check payable to **Your Company's Name** and remit payment to:

Your Company's Name
Address
Address

If you have any questions regarding this invoice, please contact **Your Company's Contact Person's Name** at **Telephone No.** and **Email Address.**