

EAST BAY MUNICIPAL UTILITY DISTRICT

REQUEST FOR PROPOSAL (RFP) No. INF 008 for INFLOW INVESTIGATION SERVICES

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For complete information regarding this project, see RFP posted at <https://www.ebmud.com/business-center/requests-proposal-rfps/> or contact the EBMUD representative listed above. Please note that prospective PROPOSERS are responsible for reviewing this site during the RFP process, for any published addenda regarding this RFP.

RESPONSE DUE

by

4:00 p.m.

on

Wednesday, April 29, 2020

via email to

christopher.dinsmore@ebmud.com

~~**EBMUD, Purchasing Division**~~

~~**375 Eleventh St., First Floor**~~

~~**Oakland, CA 94607**~~



375 Eleventh Street, Oakland, CA 94607

Website: [ebmud.com](http://www.ebmud.com)

EAST BAY MUNICIPAL UTILITY DISTRICT

RFP

for

INFLOW INVESTIGATION SERVICES (INF 008)

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EXHIBIT E - INFORMATION TECHNOLOGY SERVICES AGREEMENT TEMPLATE and PRELIMINARY
INFORMATION GATHERING DOCUMENT

EXHIBIT F - BOND FORMS

EXHIBIT G - SPECIFIC REQUIREMENTS, SCOPE & DELIVERABLES

I. STATEMENT OF WORK

A. SCOPE

It is the intent of these specifications, terms, and conditions to describe the required services for identifying sources of inflow and infiltration (I&I) within the regional wastewater collection system. These services will be a part of East Bay Municipal Utility District's (the DISTRICT) efforts to comply with the Consent Decree by investigating and assessing the wastewater collection system to identify, quantify, and prioritize sources of I&I.

For each investigation technique (i.e. Bid Item) specified within the scope, the DISTRICT intends to develop a roster of qualified, available PROPOSER(s) to perform the inflow investigations. The DISTRICT will award a two-year contract (with three options to renew for one-year terms) to the PROPOSER(s) who best meets the DISTRICT's requirements for each Bid Item. **PROPOSER may submit qualifications and pricing for one, some, or all of the Bid Items listed in this RFP.** There is no guarantee, either expressed or implied, regarding the amount of work to be allocated for each selected PROPOSER or for each Bid Item included herein.

B. BACKGROUND

The regional wastewater collection system consists of components from the DISTRICT and seven Satellite Agencies (the Cities of Alameda, Albany, Berkeley, Emeryville, Oakland, and Piedmont, plus Stege Sanitary District, which serves El Cerrito, Kensington and Richmond Annex). Each Satellite owns and operates its own sanitary sewer system that collects wastewater generated in these communities, and conveys the flows to the DISTRICT's Interceptor System. The Interceptor System then conveys the flows to the Main Wastewater Treatment Plant (MWWTP) where it is treated. Treated effluent from the MWWTP is discharged through an outfall located near the eastern span of the San Francisco-Oakland Bay Bridge.

Figure 1 shows the DISTRICT's service area, the boundaries of the Satellites, and the location of conveyance and treatment facilities. The DISTRICT's Interceptor System includes approximately 29 miles of gravity sewers, 8 miles of force mains, and 15 pump stations; the Satellites' collection systems include approximately 1,600 miles of sewers (gravity and force mains) and numerous pump stations. The work under this RFP will be for performing inflow investigations within those 1,600 miles of Satellite sanitary sewer collection system.

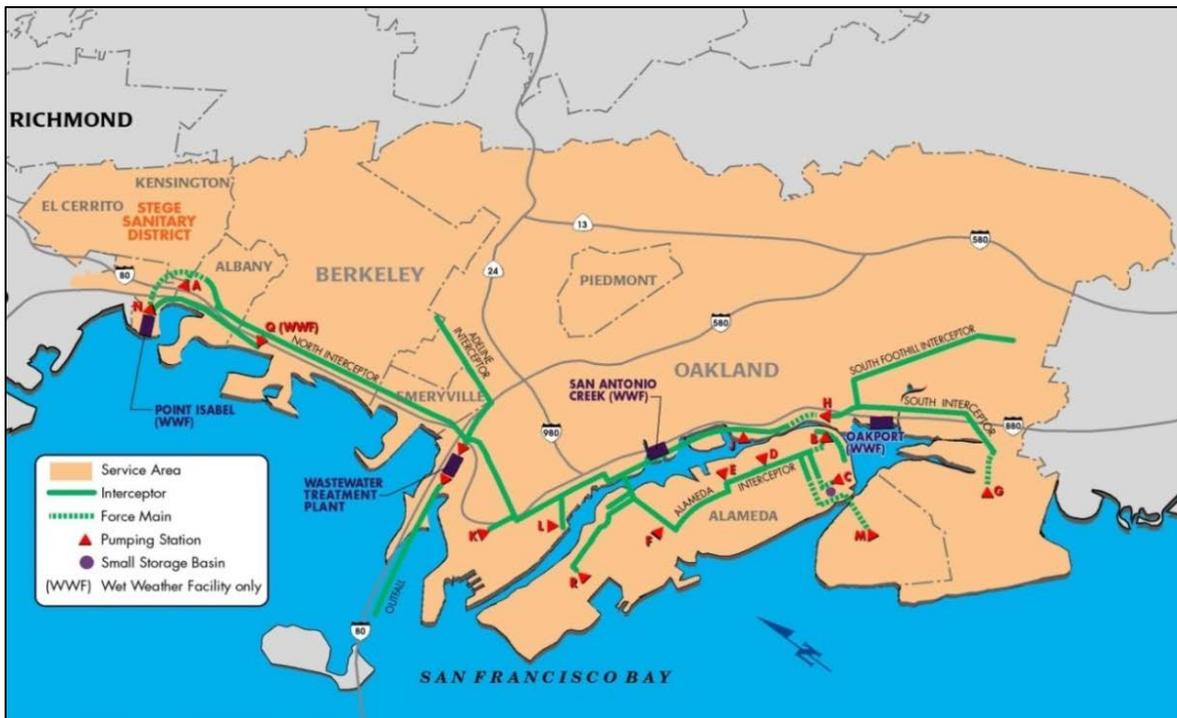


Figure 1. DISTRICT's Service Area

C. PROPOSER QUALIFICATIONS

1. Projects included in the Qualifications & Reference Summary Form (included in Exhibit A) must have been completed within the past five (5) years (2015-2020). For each Bid Item the PROPOSER is bidding on, clearly indicate either the lead firm or sub-contractor which has the required experience. The referenced experience must show successful (i.e., completed work within time and budget constraints) completion of the element of a project involving the Bid Item. A referenced project may be used for more than one Bid Item.
2. The following minimum qualifications must be met for each of Bid Item that PROPOSER is bidding on:
 - a. Bid Item 1-Mainline Inspection (CCTV)
Reference project(s) shall total at least 10 miles of CCTV inspections within a wastewater collection system with a wide range of pipe sizes. Inspectors and coders shall be PACP certified and have a minimum of one (1) year of experience in operating the equipment and coding inspections.
 - b. Bid Item 2-Mainline Inspection (Digital Imagery Scan)
Reference project(s) shall total at least 10 miles of digital imagery scan inspections within a wastewater collection system with a wide range of pipe sizes. Inspectors and coders shall be PACP certified and have a minimum of one (1) year of experience in operating the equipment and coding inspections.

- c. Bid Item 3-Mainline Hydro-Cleaning
Reference project(s) shall total at least 5 miles of hydro-cleaning within a wastewater collection system with a wide range of pipe sizes.
- d. Bid Item 6-Lateral Inspection
Reference project(s) shall total at least 50 lateral inspections. Inspectors and coders shall be PACP and LACP certified and have a minimum of one (1) year of experience in operating the equipment and coding inspections.
- e. Bid Item 7-Smoke Testing
Reference project(s) shall total at least 30 miles of smoke testing to identify potential defects within a wastewater collection system.
- f. Bid Item 8-Manhole Camera Inspections
Reference project(s) shall total at least 100 extensive manhole inspections using 360-degree digital scanning technologies. Inspectors and coders shall be MACP certified and have a minimum of one (1) year of experience in operating the equipment and coding inspections.
- g. Bid Item 9-Time Lapse Manhole Camera
Reference project(s) shall total at least 10 time lapse manhole camera monitoring sites within a wastewater collection system.
- h. Bid Item 10-Dye Testing (Hose Method)
Reference project(s) shall total at least 10 hose dye tests.
- i. Bid Item 11-Dye Testing (Plug Method)
Reference project(s) shall total at least 10 plug dye tests.
- j. Bid Item 12-Manhole Video Inspection
Reference project(s) shall total at least 10 manhole video inspections within a wastewater collection system.
- k. Bid Item 13-Point Precipitation Monitoring
Reference project(s) shall total at least 20 rain gauge installations and monitoring.
- l. Bid Item 14-Flow Monitoring
Reference project(s) shall total at least 50 flow meter installations and monitoring within a wastewater collection system with a wide range of pipe sizes and flow conditions.
- m. Bid Item 15-Level Monitoring
Reference project(s) shall total a minimum 20 level meter installations and monitoring within a wastewater collection system with a wide range of pipe sizes and flow conditions.
- n. Bid Item 16-Conductivity Monitoring
Reference project(s) shall total at least 10 conductivity metering locations within a wastewater collection system.

- o. Bid Item 17-Conductivity Isolation Investigation
PROPOSER shall have at least 1 reference project for conductivity isolation investigations, or similar, within a wastewater collection system.
 - p. Bid Item 18-Flow Isolation Investigations
PROPOSER shall have at least 3 reference projects for conductivity isolation investigations, or similar, within a wastewater collection system.
3. The following minimum qualifications must be met for the project team:
- a. If the project team is comprised of multiple CONTRACTORS/
CONSULTANTS, a Lead Firm shall be identified in the bid proposal to oversee and coordinate all work.
 - b. The PROPOSER shall identify a Project Manager from the Lead Firm to oversee and coordinate all of the investigations, monitoring and report preparations and shall be the responsible for submitting invoices and receiving payments. The Project Manager will be the primary client contact and is responsible for the day-to-day management of the project and for ensuring that the project schedule, budget and scope concerns are met.
 - c. The Project Manager must have at least ten (10) years of experience in sanitary sewer investigative services.
 - d. All Key Personnel must have at least five (5) years of experience in their respective discipline.
 - e. The same person may be used as Key Personnel for more than one area.
4. PROPOSER shall possess all permits, licenses, and professional credentials necessary to perform services as specified under this RFP.

D. SPECIFIC REQUIREMENTS

Refer to Exhibit G for specific requirements for each bid item.

E. DELIVERABLES / REPORTS

Refer to Exhibit G for deliverables required for each bid item.

II. CALENDAR OF EVENTS

EVENT	DATE/LOCATION
RFP Issued	Thursday, March 26, 2020
Last Day to Submit Questions	Thursday, April 9, 2020
DISTRICT responds to questions/ issues Addenda	Thursday, April 16, 2020
Proposals Due	Wednesday, April 29, 2020
Flow Monitoring Analysis Software Demo – Only for Bid Item 14 (Task 14.6)	Week of May 11, 2020
Award Contract by Board of Directors	Tuesday, June 23, 2020
Anticipated Contract Start Date	Wednesday, July 1, 2020

Note: All dates are subject to change by the DISTRICT.

PROPOSERS are responsible for reviewing <https://www.ebmud.com/business-center/requests-proposal-rfps/> for any published addenda. Hard copies of addenda will not be mailed out.

III. DISTRICT PROCEDURES, TERMS, AND CONDITIONS

A. RFP ACCEPTANCE AND AWARD

1. RFP responses will be evaluated by a Selection Committee and will be scored and ranked in accordance with the RFP section entitled “Evaluation Criteria/Selection Committee.”
2. The Selection Committee will recommend award to the PROPOSERS as follows:
 - a. General Services

Each General Services Bid Item will have a separate roster. Each General Services roster will be made up of all CONTRACTORS who meet minimum qualifications for that Bid Item; CONTRACTORS will be ranked by cost.
 - b. Professional Services

Each Professional Services Bid Item will have a separate roster. The Professional Services roster will be made up of CONSULTANTS who meet minimum qualifications; each will be ranked by who best serves the

overall interest of the DISTRICT. Award may not necessarily be made to the PROPOSER with the lowest overall cost.

3. The DISTRICT reserves the right to award to a single or to multiple General or Professional Service Providers, dependent upon what is in the best interest of the DISTRICT.
4. The DISTRICT has the right to decline to award this contract or any part of it for any reason.
5. Any specifications, terms, or conditions issued by the DISTRICT, or those included in the PROPOSER’s submission, in relation to this RFP, may be incorporated into any purchase order or contract that may be awarded as a result of this RFP.
6. Award of contract. The DISTRICT reserves the right to reject any or all proposals, to accept one part of a proposal and reject the other, unless the PROPOSER stipulates to the contrary, and to waive minor technical defects and administrative errors, as the interest of the DISTRICT may require. Award will be made or proposals rejected by the DISTRICT as soon as possible after proposals have been opened.

B. EVALUATION CRITERIA/SELECTION COMMITTEE

All proposals will be evaluated by a Selection Committee. The Selection Committee may be composed of DISTRICT staff and other parties that have expertise or experience in this type of procurement. The evaluation of the RFP responses shall be within the sole judgment and discretion of the Selection Committee.

The Selection Committee will evaluate each RFP response meeting the qualification requirements set forth in this RFP. PROPOSERS should bear in mind that any RFP response that is unrealistic in terms of the technical or schedule commitments, or unrealistically high or low in cost, will be deemed reflective of an inherent lack of technical competence or indicative of a failure to comprehend the complexity and risk of the DISTRICT’s requirements as set forth in this RFP.

RFP responses will be evaluated and scored according to the Evaluation Criteria below, and scored according to a zero to five-point scale. The scores for all Evaluation Criteria will then be added to arrive at a weighted score for each RFP response. An RFP response with a high weighted total will be ranked higher than one with a lesser-weighted total.

The Evaluation Criteria for the General Services Bid Items are as follows:

Evaluation Criteria - General Services	
A.	Relevant Experience and Qualifications: RFP responses will be evaluated against the RFP proposer qualifications.

Evaluation Criteria - General Services	
B.	<p>Cost: The points for Cost will be computed by dividing the amount of the lowest responsive RFP response received by each PROPOSER’s proposed cost for each Bid Item.</p> <p>All qualified PROPOSERS, who have met the minimum qualifications stated herein, will be selected to be on the General Services roster. Bid price evaluation will be based on the following units of measurement:</p> <ul style="list-style-type: none"> - Bid Item 1-Mainline Inspection (CCTV): cost per linear foot for pipe ø8”-ø21” with PACP coding - Bid Item 2-Mainline Inspection (Digital Imagery Scan): cost per linear foot for pipe ø8”-ø21” with PACP coding - Bid Item 3-Mainline Hydro-Cleaning: cost per linear foot for pipe ø8”-ø21” - Bid Item 4-Mainline Inspection (CCTV) w/ Hydro-Cleaning: cost per linear foot for pipe ø8”-ø21” with PACP coding - Bid Item 5-Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning: cost per linear foot for pipe ø8”-ø21” with PACP coding - Bid Item 6-Lateral Inspection: cost per lateral - Bid Item 7-Smoke Testing: cost per linear foot - Bid Item 8-Manhole Camera Inspection: cost per inspection with GPS - Bid Item 9-Time Lapse Manhole Camera Inspection: cost per camera installation plus 2 months of monitoring - Bid Item 10-Hose Dye Test: cost per hose dye test - Bid Item 11-Plug Dye Test: cost per plug dye test - Bid Item 12-Manhole Video Inspection: cost per inspection <p>While not reflected in the Cost evaluation points, an evaluation may also be made of:</p> <ul style="list-style-type: none"> - Reasonableness (i.e., does the proposed pricing accurately reflect the PROPOSER’s effort to meet requirements and objectives?); - Realism (i.e., is the proposed cost appropriate to the nature of the products and services to be provided?); and - Affordability (i.e., the ability of the DISTRICT to finance this project).
C.	<p>References (See Exhibit A – RFP Response Packet): If a short list process is used for a solicitation, references are only performed on the shortlisted PROPOSERS and the score for reference checks is not included in the preliminary short list score.</p>
D.	<p>Contract Equity Program: PROPOSER shall be eligible for SBE or DVBE preference points if they are a certified small business entity, as described in the guidelines contained in</p>

Evaluation Criteria - General Services	
	Exhibit A-Contract Equity Program, <u>and</u> they check the appropriate box, requesting preference, in Exhibit A-PROPOSER Information and Acceptance. Qualified DVBEs and/or SBEs will receive an additional 5 points to their total score.

The Evaluation Criteria for the Professional Service Bid Items are as follows:

Evaluation Criteria – Professional Services	
A.	<p>Cost: The points for Cost will be computed by dividing the amount of the lowest responsive RFP response received by each PROPOSER’s proposed cost for each Bid Item.</p> <p>All qualified PROPOSERS, who have met the minimum qualifications stated herein, will be selected to be on the Professional Services roster. Bid Item price evaluation will be based on the following units of measurement:</p> <ul style="list-style-type: none"> - Bid Item 13-Point Precipitation Monitoring: cost per gauge for installation/removal plus 4 months of monitoring - Bid Item 14-Flow Monitoring: cost per meter for site inspection, installation/removal, plus 4 months of monitoring - Bid Item 15-Level Monitoring: cost per meter for site inspection, installation/removal, plus 4 months of monitoring - Bid Item 16-Flow Isolation Investigation: cost per area - Bid Item 17-Conductivity Monitoring: cost per meter for site inspection, installation/removal, plus 2 months of monitoring - Bid Item 18-Conductivity Isolation Investigation: cost per area - Bid Item 19-Machine Learning: cost per linear foot for limited grade 4 and 5 defect coding only <p>While not reflected in the Cost evaluation points, an evaluation may also be made of:</p> <ul style="list-style-type: none"> - Reasonableness (i.e., does the proposed pricing accurately reflect the PROPOSER’s effort to meet requirements and objectives?); - Realism (i.e., is the proposed cost appropriate to the nature of the products and services to be provided?); and - Affordability (i.e., the ability of the DISTRICT to finance this project). <p>Consideration of price in terms of overall affordability may be controlling in circumstances where two or more RFP responses are otherwise judged to be equal, or when a superior RFP response is at a price that the DISTRICT cannot afford.</p>

<p>B.</p>	<p>Relevant Experience and Qualifications: RFP responses will be evaluated against the RFP specifications and the questions below:</p> <ul style="list-style-type: none"> - Do the individuals assigned to the project have experience on similar projects? - Are résumés complete and do they demonstrate backgrounds that would be desirable for individuals engaged in the work the project requires? - How extensive is the applicable education and experience of the personnel designated to work on the project? - Does the PROPOSER have knowledge and experience working with the DISTRICT’s Interceptor System and/or Satellite collection systems? - Does the PROPOSER demonstrate the ability to effectively manage a major I/I control program?
<p>C.</p>	<p>Understanding of the Project: RFP responses will be evaluated against the RFP specifications and the questions below:</p> <ul style="list-style-type: none"> - Has the PROPOSER demonstrated a thorough understanding of the purpose and scope of the project? - How well has the PROPOSER identified pertinent issues and potential problems related to the project? - Has the PROPOSER demonstrated that it understands the deliverables the DISTRICT expects it to provide? - Has the PROPOSER demonstrated that it understands the DISTRICT’s time schedule and can meet it?
<p>D.</p>	<p>Methodology: RFP responses will be evaluated against the RFP specifications and the questions below:</p> <ul style="list-style-type: none"> - Does the methodology depict a logical approach to fulfilling the requirements of the RFP? - Does the methodology match and contribute to achieving the objectives set out in the RFP? - Does the methodology interface with the DISTRICT’s time schedule?
<p>E.</p>	<p>Implementation Plan and Schedule: An evaluation will be made of the likelihood that the PROPOSER’s implementation plan and schedule will meet the DISTRICT’s schedule. Additional credit will be given for the identification and planning for mitigation of schedule risks which the PROPOSER believes may adversely affect any portion of the DISTRICT’s schedule.</p>

<p>F.</p>	<p>Oral Presentation and Demo (for Bid Item 14 - Flow Monitoring ONLY): All PROPOSERS bidding on Bid Item 14 - Flow Monitoring will be required to present their I&I Analysis Software to the DISTRICT. The oral presentation and demo will be up to 2.5 hours long and will be split as follows:</p> <ul style="list-style-type: none"> - PROPOSERS would be allowed thirty (30) minutes to present the capabilities of the I&I analysis software and whether the software meets all requirements listed in Exhibit G. - Ninety (90) minutes will be allowed for the DISTRICT to use the software, under the guidance of the PROPOSER, to perform I&I analysis for a sample set of data (2 months of flow and rain data from 10 flow meters and 2 rain gauges). - The remaining thirty (30) minutes would consist of questions by and discussions with DISTRICT staff. <p>The oral presentation may be conducted in person at the DISTRICT’s office (375 Eleventh Street, Oakland CA) or via conference call. The DISTRICT shall have access to the I&I analysis software prior to the oral presentation in order to resolve any technical issues regarding software installation/access.</p>
<p>G.</p>	<p>References (See Exhibit A – RFP Response Packet): If a short list process is used for a solicitation, references are only performed on the shortlisted PROPOSERS and the score for reference checks is not included in the preliminary short list score.</p>
<p>H.</p>	<p>Contract Equity Program: PROPOSER shall be eligible for SBE or DVBE points if they are a certified small business entity, as described in the guidelines contained in Exhibit A-Contract Equity Program, <u>and</u> they check the appropriate box, requesting preference, in Exhibit A-PROPOSER Information and Acceptance. Additional points will be given for local business enterprises and diversity of sub-consultants/team members for up to a total of 10 points.</p>

C. PRICING

1. Prices quoted shall be firm for the first twenty-four (24) months of any contract that may be awarded pursuant to this RFP. If any prices are adjusted following first 24-month of the contract, a re-ranking of the General Services roster will be performed.
2. All prices quoted shall be in United States dollars.
3. Price quotes shall include any and all payment incentives available to the DISTRICT.

4. PROPOSERS are advised that in the evaluation of cost, if applicable, it will be assumed that the unit price quoted is correct in the case of a discrepancy between the unit price and extended price.
5. Prevailing Wages:

All Contractors proposing on a public works project and all Subcontractors of any tier shall be registered with the State Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

The Contractor shall post a copy of the general prevailing rate of per diem wages at the jobsite pursuant to Section 1773.2 of the Labor Code of the State of California.

Pursuant to the provisions of Division 2, Part 7, Chapter 1, Article 2, and any amendments thereof of the Labor Code of the State of California, the Contractor and any Subcontractor shall pay not less than the specified prevailing rate of wages to all workers employed in the execution of the contract.

The Contractor shall, as a penalty to the State or the DISTRICT, forfeit Twenty-Five (\$25.00) Dollars for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing rates for any work or craft in which such worker is employed under the contract by the Contractor or by any Subcontractor. The difference between such stipulated prevailing wage rates and the amount paid to such worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor. The Contractor shall comply with the provisions of Section 1776 of the Labor Code of the State of California. For all classes of work not specified herein, the minimum wage shall be that specified for general laborer.

The specified wage rates are minimum rates only and the DISTRICT will not consider and shall not be liable for any claims for additional compensation made by the Contractor because of payment by Contractor of any wage rate in excess of the general prevailing rates. All disputes in regard to the payment of wages in excess of those specified herein shall be adjusted by the Contractor at his own expense.

The holidays upon which such rates shall be paid shall be all holidays recognized in the collective bargaining agreement applicable to the particular craft, classification, or type of worker employed on the project.

D. NOTICE OF INTENT TO AWARD AND PROTESTS

At the conclusion of the RFP response evaluation process, all entities who submitted a proposal package will be notified in writing by e-mail ~~or USPS mail~~ with the name of the PROPOSER being recommended for contract award. The document providing this notification is the Notice of Intent to Award.

Protests must be in writing and must be received no later than seven (7) work days after the DISTRICT issues the Notice of Intent to Award. The DISTRICT will reject the protest as untimely if it is received after this specified time frame. Protests will be accepted from PROPOSERS or potential PROPOSERS only.

If the protest is mailed and not received by the DISTRICT, the protesting party bears the burden of proof to submit evidence (e.g., certified mail receipt) that the protest was sent in a timely manner so that it would be received by the DISTRICT within the RFP protest period.

Proposal protests must contain a detailed and complete written statement describing the reason(s) for protest. The protest must include the name and/or number of the proposal, the name of the firm protesting, and include a name, telephone number, email address and physical address of the protester. If a firm is representing the protester, they shall include their contact information in addition to that of the protesting firm.

Protests must be mailed, hand delivered, or emailed to the Manager of Purchasing, Mailstop 102, East Bay Municipal Utility District, 375 Eleventh Street, Oakland, CA 94607 or P.O. Box 24055, Oakland, California 94623. Facsimile and electronic mail protests must be followed by a mailed or hand delivered identical copy of the protest and must arrive within the seven work day time limit. Any proposal protest filed with any other DISTRICT office shall be forwarded immediately to the Manager of Purchasing.

In the event that the protest is denied, the protester can appeal the determination to the requesting organization's Department Director. The appeal must be submitted to the Department Director no later than five (5) work days from the date which the protest determination was transmitted by the DISTRICT, to the protesting party. The appeal shall focus on the points raised in the original protest, and no new points shall be raised in the appeal.

Such an appeal must be made in writing and must include all grounds for the appeal and copies of the original protest and the DISTRICT's response. The proposal protester must also send the Purchasing Division a copy of all materials sent to the Department Director.

The Department Director will make a determination of the appeal and respond to the protester by certified mail in a timely manner. If the appeal is denied, the letter will include the date, time, and location of the Board of Directors meeting at which staff will make a recommendation for award and inform the protester it may request to address the Board of Directors at that meeting.

The DISTRICT may transmit copies of the protest and any attached documentation to all other parties who may be affected by the outcome of the protest. The decision of the DISTRICT as to the validity of any protest is final. This DISTRICT's final decision will be transmitted to all affected parties in a timely manner.

E. INVOICING

1. Following the complete and satisfactory performance of services and the DISTRICT's acceptance of deliverables, the DISTRICT will render payment within thirty (30) days of receipt of a correct invoice.
2. Payments for continuous services (Bid Item 9-Time Lapse Manhole Camera Inspection, Bid Item 13-Point Precipitation Monitoring, Bid Item 14-Flow Monitoring, Bid Item 15-Level Monitoring, and Bid Item 16-Conductivity Monitoring) may be submitted on a monthly basis, but the final month's invoice will be withheld until final deliverables are received and approved.
3. Permit fees paid to the local jurisdiction shall be included in the invoices; receipts for associated permit fees shall be submitted with the invoice. There should be no mark-up for Bid Item unit prices to account for permit fees.
4. Fees associated with required payment bonds shall be included in the invoices; receipts for associated costs shall be submitted with the invoice. There should be no mark-up for Bid Item unit prices to account for payment bonds.
5. The DISTRICT will notify the General or Professional Service Provider of any invoice adjustments required.
6. Invoices shall contain, at a minimum, DISTRICT purchase order number, invoice number, remit to address, and itemized services description.

F. BONDS

1. The successful PROPOSER(s) will be required to post and maintain a payment bond for 100 percent (100%) of the total contract amount for each individual project issued by the DISTRICT under this contract.
2. Bonds must be on DISTRICT forms attached to this RFP as **Exhibit F - Bond Forms**; forms will be included in each Notice to Proceed for individual projects.

IV. RFP RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION

A. DISTRICT CONTACTS

All contact during the competitive process is to be through the contact listed on the first page of this RFP. The following persons are to be contacted only for the purposes specified below:

FOR INFORMATION REGARDING TECHNICAL SPECIFICATIONS or QUESTIONS:

Attn: Kristina Zuniga, Associate Civil Engineer
 EBMUD Wastewater Department, I&I Control Program
 E-Mail: kristina.zuniga@ebmud.com
 PHONE: (510) 287-1102

FOR INFORMATION ON THE CONTRACT EQUITY PROGRAM:

Attn: Contract Equity Office
 PHONE: (510) 287-0114

AFTER AWARD:

Attn: Chris Dinsmore, Senior Civil Engineer
 EBMUD Wastewater Department, I&I Control Program
 E-Mail: christopher.dinsmore@ebmud.com
 PHONE: (510) 287-0522

B. SUBMITTAL OF RFP RESPONSE

1. Late and/or unsealed responses will not be accepted.
2. RFP responses must be submitted via ~~electronic transmissions will not be accepted. Electronic transmissions include RFP responses sent by~~ electronic mail ("e-mail").
3. RFP responses will be received only at the address e-mail shown below, ~~must be SEALED,~~ and must be received at the ~~EBMUD Purchasing Division~~ by 4:00 p.m. on the due date specified in the Calendar of Events. Any RFP response received after that time or date ~~will be rejected, or at a place other than the stated address cannot be considered and will be returned to the PROPOSER unopened.~~ All RFP responses must be received and time stamped at the stated address by the time designated. The ~~Purchasing Division's~~ timestamp provided by the email server shall be considered the official timepiece for the purpose of establishing the actual receipt of RFP responses.

4. RFP responses are to be addressed/delivered as follows:

~~E-mailed~~Mailed:

~~Christopher Dinsmore, Senior Civil Engineer~~

~~christopher.dinsmore@ebmud.com~~

~~Mr. Kelley Smith, Manager of Purchasing~~

~~East Bay Municipal Utility District~~

~~RFP for Inflow Investigations Services (INF 008)~~

~~EBMUD Purchasing Division~~

~~P.O. Box 24055~~

~~Oakland, CA 94623~~

Hand Delivered or delivered by courier or package delivery service will not be allowed.:

~~Mr. Kelley Smith, Manager of Purchasing EBMUD~~

~~East Bay Municipal Utility District~~

~~RFP for Inflow Investigations Services (INF 008)~~

~~EBMUD Purchasing Division~~

~~375 Eleventh Street, First Floor~~

~~Oakland, CA 94607~~

PROPOSER's name, ~~return address,~~ and the RFP number and title must **also appear on the mailing packagee-mail Subject line.**

5. PROPOSERS are to submit one (1) ~~electronic original hardcopy~~ RFP response (Exhibit A – RFP Response Packet, including Contract Equity Program forms and all additional documentation stated in the “Required Documentation and Submittals” section of Exhibit A), with either electronic signatures or scanned images for the pages that require a signature~~all with original ink signatures.~~ The electronic RFP response should be in a single file (PDF) format

~~PROPOSERS **must** also submit an electronic copy of their RFP response, with their hardcopy RFP response Package. The file must be on a disk or USB flash drive and enclosed with the sealed original hardcopy of the RFP response. The electronic copy should be in a single file (PDF) format, and shall be an **exact** copy of the original hard copy Exhibit A – RFP Response Packet, Contract Equity Program forms and all additional documentation stated in the “Required Documentation and Submittals” section of Exhibit A.~~

6. All costs required for the preparation and submission of an RFP response shall be borne by the PROPOSER.

7. California Government Code Section 4552: In submitting an RFP response to a public purchasing body, the PROPOSER offers and agrees that if the RFP response is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the PROPOSER for sale to the purchasing body pursuant to the RFP response. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the PROPOSER.
8. PROPOSER expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms “claim” and “knowingly” are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the DISTRICT will be entitled to civil remedies set forth in the California False Claim Act.
9. The RFP response shall remain open to acceptance and is irrevocable for a period of one hundred eighty (180) days, unless otherwise specified in the RFP documents.
10. It is understood that the DISTRICT reserves the right to reject any or all RFP responses.

C. RESPONSE FORMAT

1. **PROPOSERS shall not modify any part of Exhibits A, B, C, D, E, F or G, or qualify their RFP responses. PROPOSERS shall not submit to the DISTRICT a re-typed or otherwise re-created version of these documents or any other DISTRICT-provided document.**
2. RFP responses, in whole or in part, are NOT to be marked confidential or proprietary. The DISTRICT may refuse to consider any RFP response or part thereof so marked. RFP responses submitted in response to this RFP may be subject to public disclosure. The DISTRICT shall not be liable in any way for disclosure of any such records.

EXHIBIT A
RFP RESPONSE PACKET

REQUIRED DOCUMENTATION AND SUBMITTALS

RFP for Inflow Investigations Services (INF 008)

All of the specific documentation listed below is required to be submitted with the Exhibit A – RFP Response Packet. PROPOSERS shall submit all documentation, in the order listed below, and clearly label each section of the RFP response with the appropriate title (i.e. Table of Contents, Letter of Transmittal, Key Personnel, etc.).

1. **Letter of Transmittal:** RFP response shall include a description of the PROPOSER's capabilities and approach in providing its services to the DISTRICT, and provide a brief synopsis of the highlights of the RFP response and overall benefits to the DISTRICT. This synopsis should not exceed three (3) pages in length and should be easily understood.
2. **Key Personnel:** RFP response shall include a complete list of all key personnel associated with the RFP. This list must include all key personnel who will provide services/training to DISTRICT staff and all key personnel who will provide maintenance and support services. Resumes for all listed key personnel should also be provided (max 2 pages per person). For each person on the list, the following information shall be included:
 - a. The person's relationship with the PROPOSER, including job title and years of employment with the PROPOSER;
 - b. The role that the person will play in connection with the RFP;
 - c. The person's telephone number and e-mail address;
 - d. The person's educational background; and
 - e. The person's relevant experience, certifications, and/or merits.
3. **Description of the Proposed Services:** RFP response shall include a description, including methodology, of the terms and conditions of services to be provided during the contract term including response times. The description shall contain a basis of estimate for services including its scheduled start and completion dates, the number of PROPOSER's and DISTRICT personnel involved, and the number of hours scheduled for each person. The description shall identify spare or replacement parts that will be required in performing maintenance services, the anticipated location(s) of the spare parts, and how quickly the parts shall be available for repairs. Finally, the description must: (1) specify how the services in the RFP response will meet or exceed the requirements of the DISTRICT; (2) explain any special resources or approaches that make the services of the

PROPOSER particularly advantageous to the DISTRICT; and (3) identify any limitations or restrictions of the PROPOSER in providing the services that the DISTRICT should be aware of in evaluating its RFP response to this RFP.

4. **Sustainability Statement:** Contractors shall submit a statement regarding any sustainable, environmental or socially responsible initiatives or practices that they or their suppliers engage in. This information can be in relation to the specific services or work products solicited via this RFP, or in relation to the manufacture, delivery, or business practices of your firm.
5. **RFP Response Form & Proposer Information and Acceptance:** PROPOSERS must use the template in the “RFP Response Form” and “Proposer Information and Acceptance” sections of this Exhibit A – RFP Response Packet to provide PROPOSER information and acknowledgment and acceptance of all addenda related to this RFP.
6. **Pricing:** PROPOSERS must use the template in the “Pricing Form” section of this Exhibit A – RFP Response Packet to provide unit costs and work capacity for all Bid Items PROPOSER is bidding on.
7. **Qualifications and Reference Summary:**
 - a. PROPOSERS must use the template in the “Qualification and Reference Summary” section of this Exhibit A – RFP Response Packet to provide information to demonstrate the firm(s) and persons proposed for this project meet or exceed the minimum qualifications required for this project.
 - b. References, including names and telephone numbers of individuals who can verify time, budget, and quality of reference work, must be provided for all qualifying project experience.
 - c. References should have similar scope, volume, and requirements to those outlined in these specifications, terms, and conditions.
 - d. PROPOSERS must verify the contact information for all references provided is current and valid.
 - e. PROPOSERS are strongly encouraged to notify all references that the DISTRICT may be contacting them to obtain a reference.
 - f. The DISTRICT may contact some or all of the references provided in order to determine PROPOSER’s performance record on work similar to that described in this RFP. The DISTRICT reserves the right to contact references other than those provided in the RFP response and to use the information gained from them in the evaluation process.

8. **Exceptions, Clarifications, Amendments:**

- a. PROPOSERS must use the template in the “Exceptions, Clarifications, Amendments” section of this Exhibit A – RFP Response Packet to calling out all clarifications, exceptions, and amendments, if any, to the RFP and associated RFP documents, which shall be submitted with the PROPOSER’s RFP response.
- b. **THE DISTRICT IS UNDER NO OBLIGATION TO ACCEPT ANY EXCEPTIONS, AND SUCH EXCEPTIONS MAY BE A BASIS FOR RFP RESPONSE DISQUALIFICATION.**

9. **Contract Equity Program:**

- a. Every PROPOSER must fill out, sign, and submit the appropriate sections of the Contract Equity Program and Equal Employment Opportunity documents located at the hyperlink contained in the last page of this Exhibit A. Special attention should be given to completing Form P-25, "Employment Data and Certification". Any PROPOSER needing assistance in completing these forms should contact the DISTRICT's Contract Equity Office at (510) 287-0114 prior to submitting an RFP response.

RFP RESPONSE FORM

RFP for Inflow Investigations Services (INF 008)

To: The EAST BAY MUNICIPAL UTILITY District (“DISTRICT”)

From: _____
(Official Name of PROPOSER)

RFP RESPONSE PACKET GUIDELINES

- AS DESCRIBED IN SECTION IV- RFP RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION, PROPOSERS ARE TO SUBMIT ONE (1) ~~ORIGINAL HARDCOPY~~ELECTRONIC RFP RESPONSE ~~BY E-MAIL WITH ORIGINAL INK SIGNATURES AND ONE (1) ELECTRONIC COPY~~ (preferably in PDF format ~~on a flash drive~~), WITH EITHER ELECTRONIC SIGNATURES OR SCANNED IMAGES FOR THE PAGES THAT REQUIRE A SIGNATURE, AND SHALL CONTAINING THE FOLLOWING, IN THEIR ENTIRETY:
 - EXHIBIT A – RFP RESPONSE PACKET
 - INCLUDING ALL REQUIRED DOCUMENTATION AS DESCRIBED IN “EXHIBIT A- REQUIRED DOCUMENTATION AND SUBMITTALS”
- PROPOSERS THAT DO NOT COMPLY WITH THE REQUIREMENTS, AND/OR SUBMIT AN INCOMPLETE RFP RESPONSE MAY BE SUBJECT TO DISQUALIFICATION AND THEIR RFP RESPONSE REJECTED IN WHOLE.
- IF PROPOSERS ARE MAKING ANY CLARIFICATIONS AND/OR AMENDMENTS, OR TAKING EXCEPTION TO ANY PART OF THIS RFP, THESE MUST BE SUBMITTED IN THE EXCEPTIONS, CLARIFICATIONS, AND AMENDMENTS SECTION OF THIS EXHIBIT A – RFP RESPONSE PACKET. THE DISTRICT, AT ITS SOLE DISCRETION, MAY ACCEPT AMENDMENTS/EXCEPTIONS, OR MAY DEEM THEM TO BE UNACCEPTABLE, THEREBY RENDERING THE RFP RESPONSE DISQUALIFIED.
- PROPOSERS SHALL NOT MODIFY DISTRICT LANGUAGE IN ANY PART OF THIS RFP OR ITS EXHIBITS, NOR SHALL THEY QUALIFY THEIR RFP RESPONSE BY INSERTING THEIR OWN LANGUAGE OR FALSE CLAIMS IN THEIR RESPONSE. ANY EXCEPTIONS AND CLARIFICATIONS MUST BE PLACED IN THE “EXCEPTIONS/ CLARIFICATIONS” PAGE, NOT BURIED IN THE PROPOSAL ITSELF.”.

PROPOSER INFORMATION AND ACCEPTANCE

RFP for Inflow Investigations Services (INF 008)

1. The undersigned declares that all RFP documents, including, without limitation, the RFP, Addenda, and Exhibits, have been read and that the terms, conditions, certifications, and requirements are agreed to.
2. The undersigned is authorized to offer, and agrees to furnish, the articles and services specified in accordance with the RFP documents.
3. The undersigned acknowledges acceptance of all addenda related to this RFP. List Addenda for this RFP on the line below:

Addendum #	Date

4. The undersigned hereby certifies to the DISTRICT that all representations, certifications, and statements made by the PROPOSER, as set forth in this RFP Response Packet and attachments, are true and correct and are made under penalty of perjury pursuant to the laws of California.
5. The undersigned acknowledges that the PROPOSER is, and will be, in good standing in the State of California, with all the necessary licenses, permits, certifications, approvals, and authorizations necessary to perform all obligations in connection with this RFP and associated RFP documents.
6. It is the responsibility of each PROPOSER to be familiar with all of the specifications, terms, and conditions and, if applicable, the site condition. By the submission of an RFP response, the PROPOSER certifies that if awarded a contract it will make no claim against the DISTRICT based upon ignorance of conditions or misunderstanding of the specifications.
7. Patent indemnity: General or Professional Service Providers who do business with the DISTRICT shall hold the DISTRICT, its Directors, officers, agents, and employees harmless from liability of any nature or kind, including cost and expenses, for infringement or use of any patent, copyright or other proprietary right, secret process, patented or unpatented invention, article, or appliance furnished or used in connection with the contract or purchase order.
8. Insurance certificates are not required at the time of submission. However, by signing Exhibit A – RFP Response Packet, the PROPOSER agrees to meet the minimum insurance requirements stated in the RFP. This documentation must be provided to the DISTRICT prior to execution of an agreement by the DISTRICT, and shall include an insurance certificate which meets the minimum insurance requirements, as stated in the RFP.

9. The undersigned acknowledges that RFP responses, in whole or in part, are NOT to be marked confidential or proprietary. The DISTRICT may refuse to consider any RFP response or part thereof so marked. RFP responses submitted in response to this RFP may be subject to public disclosure. The DISTRICT shall not be liable in any way for disclosure of any such records.
10. The undersigned PROPOSER hereby submits this RFP response and binds itself to the DISTRICT. The RFP, subsequent Addenda, PROPOSERS Response Packet, and any attachments, shall be used to form the basis of a Contract, which once executed shall take precedence.
11. The undersigned acknowledges **ONE** of the following (please check only one box)*:
 - PROPOSER is not an SBE nor a DVBE and is ineligible for any Proposal preference; **OR**
 - PROPOSER is an SBE or DVBE as described in the Contract Equity Program (CEP) and Equal Employment Opportunity (EEO) Guidelines and has completed the CEP and EEO forms at the hyperlink contained in the CEP and EEO section of this Exhibit A.

*If no box is checked it will be assumed that the PROPOSER is ineligible for Proposal preference and none will be given. For additional information on SBE/DVBE Proposal preference please refer to the Contract Equity Program and Equal Employment Opportunity Guidelines at the above referenced hyperlink.

Proposer Information

Official Name of PROPOSER: _____
(exactly as it appears on PROPOSER's corporate seal and invoice)

Street Address Line 1: _____

Street Address Line 2: _____

City: _____ State: _____ Zip Code: _____

Webpage: _____

Type of Entity / Organizational Structure (check one):

- | | |
|--|--|
| <input type="checkbox"/> Corporation | <input type="checkbox"/> Joint Venture |
| <input type="checkbox"/> Limited Liability Partnership | <input type="checkbox"/> Partnership |
| <input type="checkbox"/> Limited Liability Corporation | <input type="checkbox"/> Non-Profit / Church |
| <input type="checkbox"/> Other: _____ | |

Jurisdiction of Organization Structure: _____

Date of Organization Structure: _____

Federal Tax Identification Number: _____

Department of Industrial Relations (DIR) Registration Number: _____

Primary Contact Information:

Name / Title: _____

Telephone Number: _____

E-mail Address: _____

Street Address Line 1: _____

City: _____ State: _____ Zip Code: _____

SIGNATURE: _____

Name and Title of Signer (printed): _____

Dated this _____ day of _____ 20_____

PRICING FORM

RFP for Inflow Investigations Services (INF 008)

PROPOSER Name: _____

PRICING

Cost shall be submitted on this Pricing Form as is. The prices quoted shall not include Sales Tax or Use Tax; said tax, wherever applicable, will be paid by the DISTRICT to the General or Professional Service Provider, if licensed to collect, or otherwise directly to the State.

If bidder is unable to provide any of the specified services listed below, indicate “N/A” for unit price for those services. All costs shall include fees associated with obtaining or maintaining certificates and/or insurance; labor, personnel, supervision, administration, and general correspondence; site inspections, installation, standard traffic control, safety implementation, data collection, monitoring, and reporting; vehicles, machinery, equipment, tools, and materials.

No alterations or changes of any kind to the Proposal Form(s) are permitted. RFP responses that do not comply may be subject to rejection in total. The cost quoted below shall be the cost the DISTRICT will pay for the first twenty-four (24) months of any contract that is a result of this RFP process.

Pricing shall assume investigations will take place with access from a public right-of-way.

General Services

Bid Item	Description	Unit of Measure	Unit Price ¹
1a	Mainline Inspection (CCTV) - w/ PACP coding (ø 6")	\$/LF	\$
1b	Mainline Inspection (CCTV) - w/ PACP coding (ø 8" - ø 21")	\$/LF	\$
1c	Mainline Inspection (CCTV) - w/ PACP coding (ø 24"- ø 66")	\$/LF	\$
1d	Mainline Inspection (CCTV) - w/out PACP coding (ø 6")	\$/LF	\$
1e	Mainline Inspection (CCTV) - w/out PACP coding (ø 8" - ø 21")	\$/LF	\$
1f	Mainline Inspection (CCTV) - w/out PACP coding (ø 24"- ø 66")	\$/LF	\$
2a	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 6")	\$/LF	\$
2b	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 8" - ø 21")	\$/LF	\$
2c	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 24"- ø 66")	\$/LF	\$
2d	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 6")	\$/LF	\$
2e	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 8" - ø 21")	\$/LF	\$

Bid Item	Description	Unit of Measure	Unit Price ¹
2f	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 24" - ø 66")	\$/LF	\$
3a	Mainline Hydro-Cleaning (ø 6")	\$/LF	\$
3b	Mainline Hydro-Cleaning (ø 8" - ø 21")	\$/LF	\$
3c	Mainline Hydro-Cleaning (ø 24" - ø 66")	\$/LF	\$
4a	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 6")	\$/LF	\$
4b	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 8" - ø 21")	\$/LF	\$
4c	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 24" - ø 66")	\$/LF	\$
4d	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/out PACP coding (ø 6")	\$/LF	\$
4e	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/out PACP coding (ø 8" - ø 21")	\$/LF	\$
4f	Mainline CCTV Inspection w/ Hydro-Cleaning - w/out PACP coding (ø 24" - ø 66")	\$/LF	\$
5a	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/ PACP coding (ø 6")	\$/LF	\$
5b	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/ PACP coding (ø 8" - ø 21")	\$/LF	\$
5c	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/ PACP coding (ø 24" - ø 66")	\$/LF	\$
5d	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 6")	\$/LF	\$
5e	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 8" - ø 21")	\$/LF	\$
5f	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 24" - ø 66")	\$/LF	\$
6	Lateral Inspection – Push Camera	ea.	\$
7	Smoke Testing	\$/LF	\$
8a	Manhole Inspection with GPS	ea.	\$
8b	Manhole Inspection without GPS	ea.	\$
9a	Time Lapse Manhole Camera – Site Inspection	\$/site	\$
9b	Time Lapse Manhole Camera – Installation/ Removal	\$/meter	\$
9c	Time Lapse Manhole Camera – Monitoring	\$/meter/month	\$
10	Dye Testing – Hose Method ²	ea.	\$
11	Dye Testing – Plug Method ²	ea.	\$
12	Manhole Video Inspection	\$/site	\$

Professional Services

Bid Item	Description	Unit of Measure	Unit Price ¹
13a	Point Precipitation Monitoring – Installation/ Removal	\$/gauge	\$
13b	Point Precipitation Monitoring – Monitoring	\$/gauge/month	\$
13c	Point Precipitation Monitoring – Data Viewing Platform	\$/gauge/month	\$
14a	Flow Monitoring – Site Inspection	\$/site	\$
14b	Flow Monitoring – Installation/ Removal	\$/meter	\$
14c	Flow Monitoring – Monitoring	\$/meter/month	\$
14d	Flow Monitoring – Meeting	\$/meeting	\$
14e	Flow Monitoring – Data Viewing Platform	\$/meter/month	\$
14f	Flow Monitoring – Data Analytic Software	\$/meter/month	\$
15a	Level Monitoring – Site Inspection	\$/site	\$
15b	Level Monitoring – Installation/ Removal	\$/meter	\$
15c	Level Monitoring – Monitoring	\$/meter/month	\$
15d	Level Monitoring – Data Viewing Platform	\$/meter/month	\$
16	Flow Isolation Investigation	\$/area	\$
17a	Conductivity Monitoring – Site Inspection	\$/site	\$
17b	Conductivity Monitoring – Installation/ Removal	\$/meter	\$
17c	Conductivity Monitoring – Monitoring	\$/meter/month	\$
18	Conductivity Isolation Investigation	\$/area	\$
19a	Machine Learning - program training	\$/LF	\$
19b	Machine Learning - limited grade 4 and 5 defect coding only	\$/LF	\$
19c	Machine Learning - with NASCCO coding	\$/LF	\$

¹ Unit prices shall not include permit fees paid to the local jurisdiction or Payment Bond costs. PROPOSER shall submit permit fees or costs associated with bonds and receipts, as necessary, with invoices.

WORK CAPACITY, PRODUCTION RATES, AND ALLOCATION

The PROPOSER shall indicate workload capacity for the items indicated below. If PROPOSER is not bidding on a specific Bid Item, indicate “N/A” for the quantity. For Bid Item 1-Mainline Inspections (CCTV), Bid Item 2-Mainline Inspections (Digital Imagery Scan), Bid Item 3-Mainline Hydro-Cleaning, and Bid Item 7-Smoke Testing, PROPOSER shall indicate minimum and maximum pipe size to perform service.

The DISTRICT will release work in manageable waves and will use the following table as a general guideline to define a manageable work load. For each segment of work released, the PROPOSER will have the opportunity at the time of contact to guarantee their capability for performing the requested work. In the event that a PROPOSER is unable to fulfill their guaranteed capabilities, the CONTRACTOR may be removed from consideration for future work due to non-performance.

Bid Item	Description	Unit of Measure	Quantity
1	<i>Mainline Inspection (CCTV) Pipe Size Limitation</i>	<i>inch</i>	<i>(min) to (max)</i>
1a	Mainline Inspection (CCTV) - w/ PACP coding (ø 6")	LF/week	
1b	Mainline Inspection (CCTV) - w/ PACP coding (ø 8" - ø 21")	LF/week	
1c	Mainline Inspection (CCTV) - w/ PACP coding (ø 24"- ø 66")	LF/week	
1d	Mainline Inspection (CCTV) - w/out PACP coding (ø 6")	LF/week	
1e	Mainline Inspection (CCTV) - w/out PACP coding (ø 8" - ø 21")	LF/week	
1f	Mainline Inspection (CCTV) - w/out PACP coding (ø 24"- ø 66")	LF/week	
2	<i>Mainline Inspection (Digital Imagery Scan) Pipe Size Limitation</i>	<i>inch</i>	<i>(min) to (max)</i>
2a	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 6")	LF/week	
2b	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 8" - ø 21")	LF/week	
2c	Mainline Inspection (Digital Imagery Scan) - w/ PACP coding (ø 24" - ø 66")	LF/week	
2d	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 6")	LF/week	
2e	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 8" - ø 21")	LF/week	
2f	Mainline Inspection (Digital Imagery Scan) - w/out PACP coding (ø 24" - ø 66")	LF/week	
3	<i>Mainline Hydro-Cleaning Pipe Size Limitation</i>	<i>inch</i>	<i>(min) to (max)</i>
3a	Mainline Hydro-Cleaning (ø 6")	LF/week	
3b	Mainline Hydro-Cleaning (ø 8" - ø 21")	LF/week	
3c	Mainline Hydro-Cleaning (ø 24" - ø 66")	LF/week	
4a	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 6")	LF/week	
4b	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 8" - ø 21")	LF/week	
4c	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/ PACP coding (ø 24" - ø 66")	LF/week	
4d	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/out PACP coding (ø 6")	LF/week	

Bid Item	Description	Unit of Measure	Quantity
4e	Mainline Inspection (CCTV) w/ Hydro-Cleaning - w/out PACP coding (ø 8" - ø 21")	LF/week	
4f	Mainline CCTV Inspection w/ Hydro-Cleaning - w/out PACP coding (ø 24"- ø 66")	LF/week	
5a	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/ PACP coding (ø 6")	LF/week	
5b	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning – w/ PACP coding (ø 8" - ø 21")	LF/week	
5c	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/ PACP coding (ø 24"- ø 66")	LF/week	
5d	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 6")	LF/week	
5e	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 8" - ø 21")	LF/week	
5f	Mainline Inspection (Digital Imagery Scan) w/ Hydro-Cleaning - w/out PACP coding (ø 24"- ø 66")	LF/week	
6	Lateral Inspection – Push Camera	Laterals/day	
7	<i>Smoke Testing Pipe Size Limitation</i>	<i>inch</i>	<i>(min) to (max)</i>
7	Smoke Testing	LF/week	
8a	Manhole Inspection with GPS	MHs/day	
8b	Manhole Inspection without GPS	MHs/day	
9a	Time Lapse Manhole Camera – Site Inspection	sites/week	
9b	Time Lapse Manhole Camera – Installation/ Removal	meter/week	
9c	Time Lapse Manhole Camera – Monitoring	meter/month	
10	Dye Testing – Hose Method	Dye tests/day	
11	Dye Testing – Plug Method	Dye tests/day	
12	Manhole Video Inspection	MHs/day	
13a	Point Precipitation Monitoring – Installation/ Removal	gauge/week	
13b	Point Precipitation Monitoring – Monitoring	gauge/month	
13c	Point Precipitation Monitoring – Data Viewing Platform	gauge/month	
14a	Flow Monitoring – Site Inspection	site/week	
14b	Flow Monitoring – Installation/ Removal	meter/week	
14c	Flow Monitoring – Monitoring	meter/month	
14e	Flow Monitoring – Data Viewing Platform	meter/month	
14f	Flow Monitoring – Data Analytic Software	meter/month	
15a	Level Monitoring – Site Inspection	site/week	
15b	Level Monitoring – Installation/ Removal	meter/week	

Bid Item	Description	Unit of Measure	Quantity
15c	Level Monitoring – Monitoring	meter/month	
15d	Level Monitoring – Data Viewing Platform	meter/month	
16	Flow Isolation Investigation	areas/week	
17a	Conductivity Monitoring – Site Inspection	site/week	
17b	Conductivity Monitoring – Installation/ Removal	meter/week	
17c	Conductivity Monitoring – Monitoring	meter/month	
18	Conductivity Isolation Investigation	areas/week	

QUALIFICATIONS & REFERENCE SUMMARY

RFP for Inflow Investigations Services (INF 008)

PROPOSER Name: _____

PROJECT TEAM				
Notes: ¹ Indicate portion of time the key staff will be available to work on the project.				
	Firm Name and Location	Expertise/Scope of Work		
Lead Firm:				
Sub- Contractor:				
	Individual & Firm	Discipline(s) of Expertise (e.g. Bid Item)	Yr Experience	% Avail. ¹
Project Manager				
Key Personnel				

*Print additional pages as necessary

QUALIFYING EXPERIENCE

Firm Name (Lead Firm or Sub-Contractor name):

Discipline (check one): Lateral Inspection MH Inspection Precipitation Monitoring
 Mainline Inspection Time Lapse Camera Flow Monitoring
(CCTV or Digital Scan) Level Monitoring Conductivity Monitoring
 Hydro-Cleaning Dye Testing Flow Isolation Investigations
 Smoke Testing Machine Learning

Project Name:

Key Personnel Name:

Project Description: (include quantity)

Year Prepared: (2015-2020)

Location of Project:

Contract Fee:

Reference Name:

Reference Email:

Reference Phone:

EBMUD
Use Only

Firm Name (Lead Firm or Sub-Contractor name):

Discipline (check one): Lateral Inspection MH Inspection Precipitation Monitoring
 Mainline Inspection Time Lapse Camera Flow Monitoring
(CCTV or Digital Scan) Level Monitoring Conductivity Monitoring
 Hydro-Cleaning Dye Testing Flow Isolation Investigations
 Smoke Testing Machine Learning

Project Name:

Key Personnel Name:

Project Description: (include quantity)

Year Prepared: (2015-2020)

Location of Project:

Contract Fee:

Reference Name:

Reference Email:

Reference Phone:

EBMUD
Use Only

*Print additional pages as necessary



CONTRACT EQUITY PROGRAM & EQUAL EMPLOYMENT OPPORTUNITY

The DISTRICT's Board of Directors adopted the Contract Equity Program (CEP) to enhance equal opportunities for business owners of all races, ethnicities, and genders who are interested in doing business with the DISTRICT. The program has contracting objectives, serving as the minimum level of expected contract participation for the three availability groups: white-men owned businesses, white-women owned businesses, and ethnic minority owned businesses. The contracting objectives apply to all contracts that are determined to have subcontracting opportunities, and to all General or Professional Service Providers regardless of their race, gender, or ethnicity.

All Contractors and their subcontractors performing work for the DISTRICT must be Equal Employment Opportunity (EEO) employers, and shall be bound by all laws prohibiting discrimination in employment. There shall be no discrimination against any person, or group of persons, on account of race, color, religion, creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), genetic information, or sexual orientation.

Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

All Contractors shall include the nondiscrimination provisions above in all subcontracts.

Please include the required completed forms with your proposal. Non-compliance with the Guidelines may deem a proposal non-responsive, and therefore, ineligible for contract award. Your firm is responsible for:

- 1) Reading and understanding the CEP guidelines.
- 2) Filling out and submitting with your proposal the appropriate forms.

The CEP guidelines and forms can be found at the following direct link:

[Contract Equity Guidelines and Forms](#)

The CEP guidelines and forms can also be downloaded from the DISTRICT website at the following link:

<http://ebmud.com/business-center/contract-equity-program/>

If you have questions regarding the Contract Equity Program please call (510) 287-0114.

EXHIBIT B

INSURANCE REQUIREMENTS

Insurance certificates are not required at the time of submission; however, by signing Exhibit A – RFP Response Packet, the PROPOSER agrees to meet the minimum insurance requirements stated in the RFP. This documentation must be provided to the DISTRICT, prior to award.

For any coverage that is provided on a claims-made coverage form (which type of form is permitted only where specified) the retroactive date must be shown and must be before the date of this Agreement, and before the beginning of any Services related to this Agreement.

The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONTRACTOR.

The following are the minimum insurance limits, required by the DISTRICT, to be held by the GENERAL OR PROFESSIONAL SERVICE PROVIDER performing on this RFP:

A. Insurance Requirements

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall take out and maintain during the life of the Agreement all the insurance required in this section, and if requested shall submit certificates for review and approval by the DISTRICT. The Notice to Proceed shall not be issued, and GENERAL OR PROFESSIONAL SERVICE PROVIDER shall not commence work until such insurance has been approved by the DISTRICT. The certificates shall be on forms approved by the DISTRICT. Acceptance of the certificates shall not relieve GENERAL OR PROFESSIONAL SERVICE PROVIDER of any of the insurance requirements, nor decrease the liability of GENERAL OR PROFESSIONAL SERVICE PROVIDER. The DISTRICT reserves the right to require GENERAL OR PROFESSIONAL SERVICE PROVIDER to provide insurance policies for review by the DISTRICT.

B. Workers Compensation Insurance

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall take out and maintain during the life of the Agreement Workers Compensation Insurance for all of its employees on the project. In lieu of evidence of Workers Compensation Insurance, the DISTRICT will accept a Self-Insured Certificate from the State of California. GENERAL OR PROFESSIONAL SERVICE PROVIDER shall require any subcontractor to provide it with evidence of Workers Compensation Insurance.

Waiver of Subrogation. Workers' Compensation insurance must contain a waiver of subrogation endorsement providing that each insurer waives any rights of recovery by subrogation, or otherwise, against the DISTRICT, its directors, officers, officials, agents, volunteers, and employees. GENERAL OR PROFESSIONAL SERVICE PROVIDER shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.

C. Professional Liability Insurance (Errors and Omissions)

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall maintain during the life of the agreement professional liability insurance with a minimum of \$2,000,000/Occurrence. A three year tail is required if coverage on a claims-made basis. A deductible may be acceptable upon approval by the DISTRICT. The policy will provide 30 days advance written notice to the DISTRICT for cancellation or reduction in coverage. The Consultant shall require any subcontractor to provide evidence of the same professional liability insurance coverage.

If Coverage is written on a claims-made form, the following shall apply:

1. The retroactive date must be shown, and must be before the date of the Agreement or the beginning of the Services.
2. Insurance must be maintained and evidence of insurance must be provided for a minimum of three (3) years after completion of the Services.
3. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date prior to the effective date of the Agreement, CONTRACTOR must purchase an extended period of coverage for a minimum of three (3) years after completion of the Services.

D. Pollution Liability Insurance

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall take out and maintain during the life of the Agreement, pollution liability insurance with a minimum of \$2,000,000 of liability coverage. The amount of insurance shall not be less than \$2,000,000 per occurrence, and with a three year tail if written on a claims-made basis.

A deductible may be acceptable upon approval of the DISTRICT. The policy shall provide 30 days advance written notice to DISTRICT for cancellation or reduction in coverage.

If Coverage is written on a claims-made form, the following shall apply:

1. The retroactive date must be shown, and must be before the date of the Agreement or the beginning of the Services.
2. Insurance must be maintained and evidence of insurance must be provided for a minimum of three (3) years after completion of the Services.

E. Commercial General Liability Insurance

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall take out and maintain during the life of the Agreement Automobile and General Liability Insurance that provides protection from claims which may arise from operations or performance under this Agreement. If GENERAL OR PROFESSIONAL SERVICE PROVIDER elects to self-insure (self-fund) any liability exposure during the contract period above \$50,000, GENERAL OR PROFESSIONAL SERVICE PROVIDER is required to notify the DISTRICT immediately. Any request to self-insure must first be approved by the DISTRICT before the changed terms are accepted. GENERAL OR PROFESSIONAL SERVICE PROVIDER shall require any subcontractor or Professional Service Provider to provide evidence of liability insurance coverages.

The amounts of insurance shall be not less than the following:

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- Automobile.

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- General Liability.

The following coverages or endorsements must be included in the policy(ies):

1. The DISTRICT, its Directors, officers, and employees are Additional Insureds in the policy(ies) as to the work being performed under the contract.
2. The coverage is *Primary and non-contributory* to any other applicable insurance carried by the DISTRICT.
3. The policy(ies) covers *contractual liability*.
4. The policy(ies) is written on an *occurrence* basis.
5. The policy(ies) covers the DISTRICT's Property in Consultant's care, custody, and control.
6. The policy(ies) covers *personal injury* (libel, slander, and wrongful entry and eviction) liability.
7. The policy(ies) covers explosion, collapse, and underground hazards.
8. The policy(ies) covers *products and completed operations*.
9. The policy(ies) covers the use of *owned, non-owned*, and hired automobiles.
10. The policy(ies) and/or a separate pollution liability policy(ies) shall cover pollution liability for claims related to the release or the threatened release of pollutants into the environment arising out of or resulting from Consultant's performance under this agreement.
11. The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to East Bay Municipal Utility DISTRICT at the address above.

The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to East Bay Municipal Utility DISTRICT at the address above.

EXHIBIT C
GENERAL REQUIREMENTS

GENERAL REQUIREMENTS

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1. DEFINITIONS

The following terms shall be given the meaning shown, unless context requires otherwise or a unique meaning is otherwise specified.

- a. **“Change Order”** A Change Order is a written instrument used for modifying the contract with regards to the scope of Work, contract sum, and/or Contract Time. An approved Change Order is a Change Order signed by the District. An executed Change Order is a Change Order signed by both the District and the Contractor.

- b. **“Contract”** means the agreement between the District and Contractor as memorialized in the Contract Documents.
- c. **“Business Entity”** means any individual, business, partnership, joint venture, corporation, sole proprietorship, or other private legal entity recognized by statute.
- d. **“Buyer”** means the District’s authorized contracting official.
- e. **“Contract Documents”** comprise the entire agreement between the District and the Contractor and can include the District’s contract form if used, any purchase order, RFP, RFQ or Contractor response packet, and any addenda, appendices and District approved changes or amendments. The Contract Documents are intended to be complementary and include all items necessary for the Contractor’s proper execution and completion of the Work. Any part of the Work not shown or mentioned in the Contract Documents that is reasonably implied, or is necessary or usual for proper performance of the Work, shall be provided by the Contractor at its expense.
- f. **“Contractor”** means the Business Entity with whom the District enters into a contractual agreement. Contractor shall be synonymous with “supplier”, “vendor”, “consultant” or other similar term.
- g. **“Day”** unless otherwise specified, days are calendar days, measured from midnight to the next midnight.
- h. **“District”** means the East Bay Municipal Utility District, its employees acting within the scope of their authority, and its authorized representatives.
- i. **“Goods”** means off the shelf software and all types of tangible personal property, including but not limited to materials, supplies, and equipment.
- j. **“Project Manager”** shall be the District designated individual responsible for administering and interpreting the terms and conditions of the Contract Documents, for matters relating to the Contractor’s performance under the Contract with the District, and for liaison and coordination between the District and Contractor.
- k. **“Work”** means all labor, tasks, materials, supplies, and equipment required to properly fulfill the Contractor’s obligations as required in the Contract Documents.
- l. **“Work Day”** Unless otherwise specified, work day includes all days of the year except Saturdays, Sundays and District holidays.

2. BOND

- a. When required in the District’s bid or proposal solicitation documents, the Contractor to whom award is made shall furnish a good and approved faithful performance bond and/or payment bond within ten business days after receiving the forms for execution.
- b. The bonds shall be executed by a sufficient, admitted surety insurer (i.e.: as listed on website [http://interactive.web.insurance.ca.gov/webuser/idb_co_list\\$.startup](http://interactive.web.insurance.ca.gov/webuser/idb_co_list$.startup)) admitted to transact such business in California by the California Department of Insurance. After acceptance of the bond(s) by the District, a copy of the bond(s) will be

returned to the Contractor.

- c. If, during the continuance of the Contract, any of the sureties, in the opinion of the District, are or become irresponsible, the District may require other or additional sureties, which the Contractor shall furnish to the satisfaction of the District within ten days after notice. If the Contractor fails to provide satisfactory sureties within the ten-day period, the Contract may be terminated for cause under Article 18.

3. CONTRACTOR'S FINANCIAL OBLIGATION

The Contractor shall promptly make payments to all persons supplying labor and materials used in the execution of the contract.

4. SAMPLES OR SPECIMENS

The Contractor shall submit samples or prepare test specimens of such materials to be furnished or used in the work as the Project Manager may require.

5. MATERIAL AND WORKMANSHIP

- a. All goods and materials must be new and of the specified quality and equal to approved sample, if samples have been required. In the event any goods or materials furnished or services provided by the Contractor in the performance of the Contract fail to conform to the requirements, or to the sample submitted by the Contractor, the District may reject the same, and it shall become the duty of the Contractor to reclaim and remove the item promptly or to correct the performance of services, without expense to the District, and immediately replace all such rejected items with others conforming to the Contract. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these specifications or the drawings, and it shall be the duty of the Contractor to call attention to apparent errors or omissions and request instructions before proceeding with the work. The Project Manager may, by appropriate instructions, correct errors and supply omissions, which instructions shall be binding upon the Contractor as though contained in the original Contract Documents.
- b. All materials furnished and all Work must be satisfactory to the Project Manager. Work, material, or machinery not in accordance with the Contract Documents, in the opinion of the Project Manager, shall be made to conform.

6. DEFECTIVE WORK

The Contractor shall replace at its own expense any part of the work that has been improperly executed, as determined by the Project Manager. If Contractor refuses or neglects to replace such defective work, it may be replaced by the District at the expense of the Contractor, and its sureties shall be liable therefor.

7. WARRANTY

Contractor expressly warrants that all goods furnished will conform strictly with the specifications and requirements contained herein and with all approved submittals, samples and/or models and information contained or referenced therein, all affirmations of fact or promises, and will be new, of merchantable quality, free from defects in materials and

workmanship, including but not limited to leaks, breaks, penetrations, imperfections, corrosion, deterioration, or other kinds of product deficiencies. Contractor expressly warrants that all goods to be furnished will be fit and sufficient for the purpose(s) intended. Contractor expressly warrants that all goods shall be delivered free from any security interest, lien or encumbrance of any kind, and free from any claim of infringement, copyright or other intellectual property violation, or other violation of laws, statutes, regulations, ordinances, rules, treaties, import restrictions, embargoes or other legal requirements. Contractor guarantees all products and services against faulty or inadequate design, manufacture, negligent or improper transport, handling, assembly, installation or testing, and further guaranties that there shall be strict compliance with all manufacturer guidelines, recommendations, and requirements, and that Contractor guaranties that it will conform to all requirements necessary to keep all manufacturer warranties and guarantees in full force and effect. These warranties and guarantees are inclusive of all parts, labor and equipment necessary to achieve strict conformance, and shall take precedence over any conflicting warranty or guarantee. These warranties and guarantees shall not be affected, limited, discharged or waived by any examination, inspection, delivery, acceptance, payment, course of dealing, course of performance, usage of trade, or termination for any reason and to any extent. In the absence of any conflicting language as to duration, which conflicting language will take precedence as being more specific, Contractor's aforesaid warranties and guarantees shall be in full force and effect for a period of **one** year from the date of acceptance by the District, but shall continue in full force and effect following notice from District of any warranty or guarantee issue, until such issue has been fully resolved to the satisfaction of District.

8. NOT USED

9. SAFETY AND ACCIDENT PREVENTION

In performing work under the Contract on District premises, Contractor shall conform to any specific safety requirements contained in the Contract or as required by law or regulation. Contractor shall take any additional precautions as the District may reasonably require for safety and accident prevention purposes. Any violation of such rules and requirements, unless promptly corrected, shall be grounds for termination of this Contract or Contractor's right to precede in accordance with the default provisions of the Contract Documents.

10. CHARACTER OF WORKFORCE

The Contractor shall employ none but skilled competent qualified personnel to perform the Work, and shall maintain discipline and order in the conduct of the Work at all times.

11. PREVAILING WAGES & DIR REGISTRATION

- a. Please see www.dir.ca.gov for further information regarding the below.
- b. All Contractors and Subcontractors of any tier bidding on, or offering to perform work on a public works project shall first be registered with the State Department of Industrial Relations (DIR) pursuant to Section 1725.5 of the Labor Code. No bid will be accepted nor any contract entered into without proof of the Contractor and Subcontractors' current registration with the DIR (LC § 1771.1).
- c. All public works projects awarded after January 1, 2015, are subject to compliance monitoring and enforcement by the DIR (LC § 1771.4) and all Contractors are required

to post job site notices, "as prescribed by regulation" (LC § 1771.4).

- d. To the extent applicable, pursuant to Section 1773 of the Labor Code, the District has obtained from the Director of Industrial Relations of the State of California, the general prevailing rates of per diem wages and the general prevailing rates for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification, or type of worker needed to execute the contract. Pursuant to Section 1773.2 of the Labor Code, a copy of the prevailing wage rates is on file with the District and available for inspection by any interested party at www.dir.ca.gov.
- e. The holidays upon which such rates shall be paid shall be all holidays recognized in the collective bargaining agreement applicable to the particular craft, classification, or type of worker employed on the Work.
- f. The Contractor shall post a copy of the general prevailing rate of per diem wages at the jobsite pursuant to Section 1773.2 of the Labor Code.
- g. Pursuant to Section 1774 of the Labor Code, the Contractor and any of its Subcontractors shall not pay less than the specified prevailing rate of wages to all workers employed in the execution of the contract.
- h. As set forth with more specificity in Section 1773.1 of the Labor Code, "per diem" wages include employer payments for health and welfare, pension, vacation, travel, subsistence and, in certain instances, apprenticeship or other training programs, and shall be paid at the rate and in the amount spelled out in the pertinent prevailing wage determinations issued by the Director of Industrial Relations.
- i. The Contractor shall, as a penalty to the State or the District, forfeit not more than the maximum set forth in Section 1775 of the Labor Code for each calendar day, or portion thereof, for each worker paid less than the prevailing rates for the work or craft in which the worker is employed under the contract by the Contractor or by any Subcontractor under him. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which such worker was paid less than the stipulated prevailing wage rate shall be paid to such worker by the Contractor.
- j. The specified wage rates are minimum rates only and the District will not consider and shall not be liable for any claims for additional compensation made by the Contractor because of its payment of any wage rate in excess of the general prevailing rates. All disputes in regard to the payment of wages in excess of those specified herein shall be adjusted by the Contractor at its own expense.
- k. General prevailing wage determinations have expiration dates with either a single asterisk or a double asterisk. Pursuant to California Code of Regulations, Title 8, Section 16204, the single asterisk means that the general prevailing wage determination shall be in effect for the specified contract duration. The double asterisk means that the predetermined wage modification shall be paid after the expiration date. No adjustment in the Contract Sum will be made for the Contractor's payment of these predetermined wage modifications.

12. PAYROLL RECORDS & ELECTRONIC SUBMISSION

- a. The Contractor and each Subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the Work. The payroll records shall be certified and shall be available for inspection in accordance with the provisions of Section 1776 of the Labor Code. Certified payroll records shall be on the forms provided by the DIR or contain the same information required on the Department's form.
- b. The Contractor shall submit for each week in which any contract Work is performed a copy of all payroll records to the Project Manager. The Contractor shall be responsible for submission of copies of payroll records of all Subcontractors.
- c. The Contractor or Subcontractor shall certify the payroll records as shown on the DIR form. In addition, the records shall be accompanied by a statement signed by the Contractor or Subcontractor certifying that the classifications truly reflect the Work performed and that the wage rates are not less than those required to be paid.
- d. For public works projects awarded on or after April 1, 2015, or that are still ongoing after April 1, 2016, no matter when awarded, each Contractor and Subcontractor shall furnish the certified payroll related records as more specifically described above and in Labor Code section 1776 directly to the Labor Commissioner (see LC § 1771.4). These records shall be provided to the Labor Commissioner at least monthly or more frequently if required by the terms of the Contract. For exception on projects covered by collective bargaining agreements like a PLA, please see Labor Code section 1771.4.
- e. In the event of noncompliance with the requirements of Section 1776 of the Labor Code, the Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such Contractor must comply with said Section. Should noncompliance still be evident after such 10-day period, the Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1776 of the Labor Code for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.
- f. The Contractor and every Subcontractor shall post at the workplace and comply with all required wage related workplace postings. Copies of the required postings may be downloaded or ordered electronically from the Department of Industrial Relations website at <http://www.dir.ca.gov/wpnodb.html>.

13. HOURS OF LABOR

Pursuant to the provisions of Sections 1810, et seq. of the Labor Code and any amendments thereof:

- a. Eight hours of labor constitutes a legal day's Work under the contract.

- b. The time of service of any worker employed upon the work shall be limited and restricted to eight hours during any one calendar day, and forty hours during any one calendar week except as provided in Article 13.iv below.
- c. The Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1813 of the Labor Code for each worker employed in the execution of the contract by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any calendar day and forty hours in any one calendar week in violation of this Article and the provisions of Labor Code, Sections 1810, et seq.
- d. Work performed by employees of the Contractor in excess of eight hours per day, and forty hours during any one calendar week, shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay.
- e. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by him in connection with the Work; the record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Standards Enforcement of the State of California.

14. EMPLOYMENT OF APPRENTICES

- a. In the performance of the contract, the Contractor and any Subcontractor shall comply with the provisions concerning the employment of apprentices in Section 1777.5 of the Labor Code and any amendments thereof.
- b. In the event the Contractor or any Subcontractor willfully fails to comply with the aforesaid section, such Contractor or Subcontractor shall be subject to the penalties for noncompliance in Labor Code, Section 1777.7.

15. CHANGES

- a. Changes in the Work can only be made in writing signed by an authorized employee of the District. If the change causes an increase or decrease in the contract sum, or a change in the time for performance under the Contract, an adjustment may be made as determined by the Project Manager.
- b. The District reserves the right to make changes in the design of materials, equipment, or machinery, to make alterations or additions to or deviations or subtractions from the Contract and any specifications and drawings, to increase or decrease the required quantity of any item or portion of the Work or to omit any item or portion of the Work, as may be deemed by the Project Manager to be necessary or advisable and to order such extra work as may be determined by the Project Manager to be required for the proper execution and completion of the whole Work contemplated. Any such changes will be ordered in writing by the Project Manager. The determination of the Project Manager on all questions relating to changes, including extra work, shall be conclusive and binding.

- c. Prior to issuing an amendment or change to the Contract, the Project Manager may request that the Contractor submit a proposal covering the changes. Within 10 business days of receiving the request, the Contractor shall submit its proposal to the Project Manager of all costs associated with the proposed amendment or change and any request for an extension of Contract time. Contractor's proposal shall include detailed estimates with cost breakdowns, including labor, material, equipment, overhead, and profit. Labor shall be broken down into hours and rate per hour. If applicable, the proposal shall include a breakdown for off-site labor (including factory labor, engineering, etc.). The Contractor's proposal shall include an analysis of schedule impact when the Contractor is requesting an adjustment in contract time. The Contractor shall be responsible for any delay associated with its failure to submit its change proposal within the time specified. If the Project Manager decides not to issue an amendment or change after requesting a proposal from the Contractor, the Contractor will be notified in writing. The Contractor is not entitled to reimbursement for Change Order preparation costs if the Contractor's proposal is not accepted by the Project Manager.

- d. If the Contractor agrees with the terms and conditions of the approved Change Order, the Contractor shall indicate its acceptance by signing the original copy and returning it to the Project Manager within 10 Work Days after receipt or with reasonable promptness and in such sequence as to not delay the Work or activities of the District or of separate contractors, whichever is sooner. If notice of any change is required to be given to a surety by the provisions of any bond, the Contractor shall provide notice and the amount of each applicable bond shall be adjusted separately. Payment in accordance with the terms and conditions set forth in the executed Change Order shall constitute full compensation for all Work included in the Change Order and the District will be released from any and all claims for direct, indirect, and impact expenses and additional time impact resulting from the Work. If the Contractor disagrees with the terms and conditions of the approved Change Order, the Contractor shall indicate specific areas of disagreement and return the approved Change Order to the Project Manager with a detailed written dispute. No payment will be made on the disputed work until the approved Change Order is returned to the Project Manager. However, whether or not the Contractor agrees with the terms and conditions of an approved Change Order, the Contractor shall immediately revise its sequence of operations as required to facilitate timely completion of the changed work and shall proceed with the revised work sequence.

- e. The Project Manager may, after having received a written cost quotation from the Contractor, order the Contractor, in writing, to proceed with the work prior to issuance of an approved Change Order through a change directive. The change directive will authorize the Contractor to proceed with the work subject to the cost quotation submitted by the Contractor. Within five days following receipt of the change directive, the Contractor shall submit a detailed change proposal documenting the amount of compensation. The Project Manager will review the change proposal and, at its option, will either issue an approved Change Order for the work or direct the Contractor to perform the work through Force Account. Until the method of compensation is determined and the approved Change Order is received, the Contractor shall keep full and complete time and material records of the cost of the ordered work and shall permit the Project Manager to have access to such records. An approved Change Order shall supersede any previously issued written change directive covering the same Work.

16. EFFECT OF EXTENSIONS OF TIME

The granting, or acceptance, of extensions of time to complete the Work or furnish the labor, supplies, materials or equipment, or any one of the aforementioned, will not operate as a release of Contractor or the surety on Contractor's faithful performance bond.

17. DELAYS

- a. The Contractor shall take reasonable precautions to foresee and prevent delays to the Work. When the Contractor foresees a delay event, and upon the occurrence of a delay event, the Contractor shall immediately notify the Project Manager of the probability or the actual occurrence of a delay, and its cause. With respect to all delays (compensable, excusable or inexcusable), the Contractor shall reschedule the Work and revise its operations, to the extent possible, to mitigate the effects of the delay. Within 15 days from the beginning of a delay the Contractor shall provide the Project Manager with a detailed written description of the delay, its cause, its impact and the Contractor's mitigation plans. Failure to provide the notification required above waives the Contractor's right to any additional time or compensation resulting from the delay for whatever cause. The Project Manager will investigate the facts and ascertain the extent of the delay, and the Project Manager's findings thereon shall be final and conclusive, except in the case of gross error. An extension of time must be approved by the Project Manager to be effective, but an extension of time, whether with or without consent of the sureties, shall not release the sureties from their obligations, which shall remain in full force until the discharge of the contract.
- b. For inexcusable delays (delays caused by circumstances within the Contractor's control, the control of its subcontractors or supplies of any tier, or within the scope of the Contractor's contract responsibilities) the Contractor shall not be entitled to an extension of time or additional compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the inexcusable delay.
- c. For excusable delays (delays to completion of the Work within the time limits set forth in the Contract Documents directly caused by events beyond the control of both the Contractor and the District, which delay is not concurrent with an inexcusable delay and which could not have been avoided by the Contractor through reasonable mitigation measures).
- d. For compensable delays (delays to completion of the Work within the time limits set forth in the Contract Documents that could not be avoided by Contractor mitigation, caused directly and solely by the District or by causes within the exclusive control of the District, and which were not concurrent with any other type of delay) the Project Manager will grant the Contractor an extension of the time to perform under the Contract and compensation in an amount that represents the Contractor's actual direct costs incurred as a direct result of the compensable delay. The Contractor may recover its direct costs only and may not recover (and waives) all other types of indirect, consequential, special and incidental damages.
- e. For concurrent delays (two or more independent causes of delay directly preventing the Contractor from completing the Work within the time limits set forth in the Contract Documents where the delays occur at the same time during all or a portion of the delay period being considered, and where each of the delays would have caused delay to the

Contractor even in the absence of any of the other delays, and none of the delays could have been avoided by Contractor mitigations) the following rules apply:

- i. One or more of the concurrent delays are excusable or compensable, then the period of concurrent delay will be treated as an excusable delay; and
- ii. All of the concurrent delays are inexcusable, then the period of concurrent delay will be inexcusable.

18. TERMINATION

a. Termination by the District for Cause:

- i. District may terminate the Contractor's right to proceed under the Contract, in whole or in part, for cause at any time after the occurrence of any of the following events, each of which constitutes a default:
 - 1. The Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
 - 2. The Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
 - 3. A receiver is appointed to take charge of the Contractor's property.
 - 4. The Contractor fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
 - 5. The Contractor fails to make progress so as to endanger performance of the Work within the contractually required time.
 - 6. The Contractor disregards legal requirements of agencies having jurisdiction over the Work, the Contractor, or the District.
 - 7. The Contractor fails to provide the District with a written plan to cure a District identified default within five business days after the District's request for a plan to cure; the District does not accept the Contractor's plan for curing its default; or the Contractor does not fully carry out an accepted plan to cure.
 - 8. The Contractor abandons the Work. Abandonment is conclusively presumed when the District requests a written plan to cure a default and the Contractor does not submit the plan within five business days of the District's request.

9. The Contractor materially fails to meet its obligations in accordance with the Contract Documents.
 10. The Contractor is in default of any other material obligation under the Contract Documents.
- ii. If any of the above events occur, the District may, in its discretion, require that the Contractor submit a written plan to cure its default, which plan must be provided to the District within 5 business days of the request and must include a realistic, executable plan for curing the noted defaults.
 - iii. Upon any of the occurrences referred to in Article 18.a.i. above, the District may, at its election and by notice to the Contractor, terminate the Contract in whole or in part; accept the assignment of any or all of the subcontracts; and then complete the Work by any method the District may deem expedient. If requested by the District, the Contractor shall remove any part or all of the Contractor's materials, supplies, equipment, tools, and machinery from the site of the Work within seven days of such request; and, if the Contractor fails to do so, the District may remove or store, and after 90 days sell, any of the same at the Contractor's expense.
 - iv. No termination or action taken by the District after termination shall prejudice any other rights or remedies of the District provided by law or by the Contract Documents.
 - v. Conversion: If, after termination for other than convenience, it is determined that the Contractor was not in default or material breach, or that the default or material breach was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for convenience pursuant to Article 18.b. below.
- b. Termination by the District for Convenience:
- i. The District may, at its option, and for its convenience, terminate the Contract at any time by giving written notice to the Contractor specifying the effective date of termination. Upon such termination, the Contractor agrees to comply with the notice and further agrees to waive any claims for damages, including loss of anticipated profits, on account of the termination; and, as the sole right and remedy of the Contractor, the District shall pay the Contractor as set forth below.
 - ii. Upon receipt of a notice of termination for convenience, the Contractor shall, unless the notice directs otherwise, do the following:

1. Immediately discontinue its performance of the Contract to the extent specified in the notice.
 2. Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of a portion of the Work that is not discontinued or that is necessary for an orderly cessation of the Work.
 3. Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
 4. Thereafter, do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment in transit to or on the site of performance.
- iii. Upon such termination for convenience, the District will pay to the Contractor the sum of the following:
1. The amount of the contract sum allocable to the portion of the Work properly performed by the Contractor as of the effective date of termination, less sums previously paid to the Contractor.
 2. Previously unpaid costs of any items delivered to the project site that were already fabricated for subsequent incorporation into the Work.
 3. Any proven losses with respect to materials and equipment directly resulting from the termination.
 4. Reasonable demobilization costs.
- iv. The above reimbursement is the sole and exclusive remedy to which the Contractor is entitled in the event the contract is terminated for convenience; and the Contractor expressly waives any other claims, damages, demands, compensation or recovery related to this contract or project. The Contractor agrees to sign a general release incorporating this waiver.
- c. Effect of Termination: Upon termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to the Contractor's obligations under Article 18.b.ii, as to bona fide obligations assumed by the Contractor prior to the date of termination.
- d. Force Majeure: If the contract is suspended or terminated by the District because Contractor's performance is prevented or delayed by an event including an irresistible, superhuman cause, or by the act of public enemies of the State of

California or of the United States (“Force Majeure”) , the Contractor will be paid for Work performed prior to the Force Majeure event at either (i) the unit prices named in the Contract; or (ii) in the event no unit prices are named, a sum equal to the percentage of the total contract amount that matches the percentage of the total contract Work performed prior to the Force Majeure event.

19. DAMAGES

All losses or damages to material or equipment to be furnished pursuant to the Contract Documents occurring prior to receipt and final acceptance of the Work shall be sustained by the Contractor. The Contractor shall sustain all losses arising from unforeseen obstructions or difficulties, either natural or artificial, encountered in the prosecution of the Work, or from any action of the elements prior to final acceptance of the work, or from an act or omission on the part of the Contractor not authorized by the Contract Documents.

20. ORDER OF PRECEDENCE

- a. In the case of conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence is as follows. Within the same order of precedence, specific requirements shall take precedence over general requirements.
 - i. Approved Change Orders.
 - ii. Addenda.
 - iii. RFQ or RFP.
 - iv. Referenced Standard Specifications and Drawings.
 - v. Contractor’s Response Packet.
- b. With reference to drawings:
 - i. Numerical dimensions govern over scaled dimensions.
 - ii. Detailed drawings govern over general drawings.
 - iii. Addenda/Change Order drawings govern over contract drawings.
 - iv. Contract drawings govern over standard drawings.
 - v. Notes apply only to the drawing where the notes appear, unless classified as “typical” or intended to apply elsewhere in which case they apply to all drawings where the conditions or circumstance noted occurs.
 - vi. Typical details apply to all drawings unless a specific different detail is shown.

21. INDEMNIFICATION/RESPONSIBILITY

- a. Contractor shall indemnify, keep and save harmless the District and each of its directors, officers, agents and employees against any and all suits, claims or actions arising out of

any of the following:

- i. Any injury to persons or property that may occur, or that may be alleged to have occurred, arising from the performance or implementation of this Contract; or
 - ii. Any allegation that materials or services developed, provided or used for this Contract infringe or violate any copyright, trademark, patent, trade secret, or any other intellectual-property or proprietary right of any third party.
- b. Contractor further agrees to defend any and all such actions, suits or claims and pay all charges of attorneys and all other costs and expenses of defenses as they are incurred. If any judgment is rendered, or settlement reached, against the District or any of the other agencies or individuals enumerated above in any such action, Contractor shall, at its expense, satisfy and discharge the same.
- c. This indemnification shall survive termination or expiration of the Contract.

22. PROHIBITION OF ASSIGNMENT

The Contractor shall not assign, transfer, or otherwise dispose of any of its rights, duties or obligations under this Contract. This prohibition does not apply to the District. The District retains the right to assign this Contract in whole or in part at any time upon reasonable terms.

23. NEWS RELEASES

The Contractor, its employees, subcontractors, and agents shall not refer to the District, or use any logos, images, or photographs of the District for any commercial purpose, including, but not limited to, advertising, promotion, or public relations, without the District's prior written consent. Such written consent shall not be required for the inclusion of the District's name on a customer list.

24. SEVERABILITY

Should any part of the Contract be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of the Contract, which shall continue in full force and effect, provided that the remainder of the Contract can be interpreted to give effect to the intentions of the parties.

25. COVENANT AGAINST GRATUITIES

The Contractor warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the District with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the District shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the District in procuring on the open market any items which Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in

equity.

26. RIGHTS AND REMEDIES OF THE DISTRICT

The rights and remedies of the District provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

27. WAIVER OF RIGHTS

Any action or inaction by the District or the failure of the District on any occasion, to enforce any right or provision of the Contract, shall not be construed to be a waiver by the District of its rights and shall not prevent the District from enforcing such provision or right on any future occasion. Rights and remedies are cumulative and are in addition to any other rights or remedies that the District may have at law or in equity.

28. CONFIDENTIALITY

Contractor agrees to maintain in confidence and not disclose to any person or entity, without the District's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of the District. Contractor further agrees to maintain in confidence and not to disclose to any person or entity, any data, information, technology, or material developed or obtained by Contractor during the term of the Contract. The covenants contained in this paragraph shall survive the termination of this Contract for whatever cause.



EXHIBIT D

IRAN CONTRACTING ACT CERTIFICATION

Pursuant to Public Contract Code (PCC) § 2204, an Iran Contracting Act Certification is required for solicitations of goods or services of \$1,000,000 or more.

To submit a bid or proposal to East Bay Municipal Utility District (District), you must complete **ONLY ONE** of the following two paragraphs. To complete paragraph 1, check the corresponding box **and** complete the certification for paragraph 1. To complete paragraph 2, check the corresponding box and attach a copy of the written permission from the District.

- 1. We are not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services (“DGS”) pursuant to PCC § 2203(b), and we are not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

CERTIFICATION FOR PARAGRAPH 1:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the proposer/bidder to the clause in paragraph 1. This certification is made under the laws of the State of California.

Firm: _____

By: _____ Date: _____
(Signature of Bidder)

Title: _____

Signed at: _____ County, State of: _____

OR

- 2. We have received written permission from the District to submit a bid or proposal pursuant to PCC § 2203(c) or (d). *A copy of the written permission from the District is included with our bid or proposal.*

EXHIBIT E
INFORMATION TECHNOLOGY SERVICES
AGREEMENT TEMPLATE
and
PRELIMINARY SECURITY INFORMATION
GATHERING DOCUMENT

(FOR REFERENCE ONLY)

**INFORMATION TECHNOLOGY SERVICES AGREEMENT
BETWEEN
THE EAST BAY MUNICIPAL UTILITY DISTRICT
AND
[CONTRACTOR]**

This Information Technology Services Agreement (“Agreement”), effective as of [DATE] (the “Effective Date”), is by and between the East Bay Municipal Utility District (“District”), a public entity, and [Contractor Name], a [State of Organization] [Entity Type] (“Contractor”). The District and Contractor may be referred to herein collectively as the “Parties” or individually as a “Party.”

RECITALS

1. The District requires [*briefly describe services*], defined as the “Services” below.
2. Contractor has submitted a proposal to provide the Services and Contractor represents that it has the experience, licenses, qualifications, staff and expertise to provide the Services in a professional and competent manner.
3. The District’s Board of Directors has authorized this Agreement by Motion Number _____.
4. In consideration of the mutual covenants, terms, and conditions set forth below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

AGREEMENT

It is agreed that the District retains Contractor to provide the Services, and Contractor accepts this engagement based on the requirements described in this Agreement and the following Exhibits, all of which are incorporated into this Agreement by reference:

Exhibit A	Scope of Services
Exhibit B	Payment Terms and Procedures
Exhibit C	Bond Requirements
Exhibit D	Public Works Forms

1. DEFINITIONS

- 1.1. “Authorized Employees” means Contractor’s employees who have a need to know or otherwise access Protected Information to enable Contractor to perform its obligations under this Agreement.
- 1.2. “Authorized Persons” means Authorized Employees and Contractor’s agents and contractors who have a need to know or otherwise access Protected Information to enable Contractor to perform its obligations under this Agreement.

- 1.3. "Change Order" A Change Order is a written instrument used for modifying this Agreement with regards to the scope of Services, Agreement sum, and/or Agreement Time. An approved Change Order is a Change Order signed by the District Project Manager. An executed Change Order is a Change Order signed by both the District Project Manager and Contractor Project Manager.
- 1.4. "Customer Information" means the name, address, phone number, account number and water usage data of any water or wastewater customer of the District.
- 1.5. "Days" shall mean calendar days.
- 1.6. "Delay Event" shall mean any act, occurrence or omission causing a delay in the completion of the Services within the time limits set forth in this Agreement.
 - 1.6.1. "Compensable Delay Event" shall mean a Delay Event that could not be avoided by Contractor mitigation, caused directly and solely by the District or by causes within the exclusive control of the District, and which were not concurrent with any other type of Delay Event.
 - 1.6.2. "Concurrent Delay Event" shall mean two or more independent Delay Events where the Delay Events occur at the same time during all or a portion of the delay period being considered, and where each of the Delay Events would have caused delay to Contractor even in the absence of any of the other Delay Events.
 - 1.6.3. "Excusable Delay Event" shall mean a Delay Event directly caused by events beyond the control of both Contractor and the District, including Force Majeure events, which is not concurrent with an Inexcusable Delay Event and which could not have been avoided by Contractor through reasonable mitigation measures.
 - 1.6.4. "Inexcusable Delay Event" shall mean a Delay Event caused by circumstances within the control of Contractor, its subcontractors or suppliers of any tier.
- 1.7. "District Information" means all data to be handled by Contractor pursuant to the Services, including but not limited to Customer Information, Employee Information, Facilities Information and Personal Information.
- 1.8. "Employee Information" means an employee identification number, personnel records and any Personal Information of a District employee.
- 1.9. "Facilities Information" means any data or records that could reveal details of critical District infrastructure or operations, including, but not limited to, reports, maps, drawings, databases, models, GIS information, and plans and schematics containing detailed information about the District's water and wastewater infrastructure that, if released, could compromise the safety, integrity, and operations of the public water

and wastewater system. Examples include the locations of security systems and security devices, services, pipelines, interceptors, aqueducts, valves, pressure zones, or details about major facilities (i.e., wet weather processing, treatment plants, pumping plants, and storage structures).

1.10. “Force Majeure” means any act of God, war, earthquake, fire, flood, storm, civil disobedience, court order, labor dispute, or other cause beyond a Party’s reasonable control Any acts of domestic or foreign hacking or cyberwarfare are specifically excluded from this definition of Force Majeure and do not excuse Contractor from performance.

1.11. “Highly-Sensitive Personal Information” means an individual’s:

1.11.1. Government-issued identification numbers (including Social Security number, partial Social Security number, driver’s license number, or state-issued identification number);

1.11.2. Financial account numbers, credit card numbers, debit card numbers, or credit report information, with or without any required security codes, access codes, personal identification numbers, or passwords that would permit access to an individual’s financial accounts; or

1.11.3. Biometric, genetic, health, medical, or medical insurance data.

1.12. “Personal Information” means information provided to Contractor by or at the direction of the District, information which is created or obtained by Contractor on behalf of the District, or information to which access was provided to Contractor by or at the direction of the District, in the course of Contractor’s performance under this Agreement, that is:

1.12.1. Information that identifies or can be used to identify an individual (including, without limitation, names, signatures, addresses, telephone numbers, email addresses, and other unique identifiers);

1.12.2. Information that can be used to authenticate an individual (including, without limitation, employee identification numbers, government-issued identification numbers, passwords or PINs, user identification and account access credentials or passwords, financial account numbers, credit or debit card numbers, credit report information, medical insurance data, answers to security questions, and other personal identifiers); and

1.12.3. All Highly-Sensitive Personal Information.

1.13. “Protected Information” means the following:

1.13.1. Customer Information.

1.13.2. Employee Information.

1.13.3. Facilities Information.

1.13.4. Personal Information.

1.14. "Security Breach" means any act or omission that gives rise to the reasonable belief of a compromise to the security, confidentiality, or integrity of Protected Information or the physical, technical, administrative, or organizational safeguards put in place by Contractor or any Authorized Persons, or by the District should Contractor have access to the District's systems in the performance of the Services, that relate to the protection of the security, confidentiality, or integrity of Protected Information. Without limiting the foregoing, a compromise shall include any unauthorized access to or disclosure or acquisition of Protected Information.

1.15. "Services" means those services described in Paragraph 2 and on Exhibit A to this Agreement.

2. SERVICES TO BE PROVIDED

2.1. Contractor agrees to furnish the Services as described in Exhibit A, Scope of Services, attached to and incorporated in this Agreement.

2.2. The Services shall be completed and submitted in accordance with the standards specified and the schedule listed in Exhibit A. The completion dates specified may be modified by mutual agreement between the District and Contractor, provided that the District's Project Manager notifies Contractor of modified completion dates by letter. Contractor agrees to diligently perform the Services. In the performance of this Agreement, time is of the essence.

2.3. To the extent any Service performance standards or requirements as described in this Agreement conflict with any performance standards or requirements included in any license or terms and conditions document provided by Contractor or Contractor's, partners, contractors or agents to the District in support of the Services, whether included as an exhibit to this Agreement or not, the requirements as stated in this Agreement shall govern.

2.4. It is understood and agreed that Contractor has the professional skills necessary to perform the Services and that the District relies upon the professional skills of Contractor to perform the Services in a skillful and professional manner. Contractor represents that it has all the necessary licenses to perform the Services and shall maintain them during the term of this Agreement. Contractor agrees that the Services shall follow practices usual and customary to the software engineering profession. Acceptance by the District of the Services does not operate as a release of Contractor from such professional responsibility for the work performed.

- 2.5. Contractor agrees to maintain in confidence and not disclose to any person or entity, without the District's prior written consent, any District Information or, trade secret, confidential information or knowledge or data relating to the products, process, or operation of the District. Contractor further agrees to maintain in confidence and not to disclose to any person or entity, any District Information, data, information, technology, or material developed or obtained by Contractor during the term of this Agreement. The covenants contained in this Paragraph shall survive the termination of this Agreement for whatever cause.
- 2.6. The originals of all computations, drawings, designs, graphics, studies, reports, manuals, photographs, videotapes, data, computer files, and other documents prepared or caused to be prepared by Contractor or its subconsultants in connection with the Services shall be delivered to and shall become the exclusive property of the District. The District is licensed to utilize these documents for the District applications on other projects or extensions of this project, at its own risk. Contractor and its subconsultants may retain and use copies of such documents, with written approval of the District.
- 2.7. Contractor is an independent contractor and not an employee of the District. Contractor expressly warrants that it will not represent that it is an employee or servant of the District.
- 2.8. Contractor is retained to provide the Services only and all payments made are compensation solely for provision of the Services and recommendations it may make in performing the Services.
- 2.9. It is further understood and agreed by the Parties that Contractor, in the performance of its obligations under this Agreement, is subject to the control or direction of the District as to the designation of tasks to be performed and the results to be accomplished, and not the means, methods, or sequence used by Contractor for accomplishing the results, unless otherwise specified in Exhibit A.
- 2.10. If any third persons are employed by Contractor in the performance of this agreement, such persons shall be entirely and exclusively under the direction, supervision, and control of Contractor. All terms of employment, including hours, wages, working conditions, discipline, hiring, and discharging, or any other terms of employment or requirements of law shall be determined by Contractor, and the District shall have no right or authority over such persons or their terms of employment.
- 2.11. It is further understood and agreed that as an independent contractor, neither Contractor nor Contractor's assigned personnel shall have any entitlement as a District employee, right to act on behalf of the District in any capacity whatsoever as an agent, nor to bind the District to any obligation whatsoever. Contractor shall not be covered by the District's worker's compensation insurance; nor shall Contractor be

entitled to compensated sick leave, vacation leave, retirement entitlements, participation in group health, dental, life or other insurance programs, or entitled to other fringe benefits payable by the District to employees of the District.

3. TERM OF AGREEMENT

- 3.1. Unless earlier terminated pursuant to Paragraph 8, this Agreement shall commence on the Effective Date and shall expire when all tasks have been completed and final payment has been made by the District.
- 3.2. Following expiration of the Initial Term, the District may renew this Agreement for additional successive terms of one (1) year by providing Contractor with written notice for up to three (3) additional successive terms (each a "Renewal Term" and, collectively, together with the Initial Term, the "Term").

4. COMPENSATION

- 4.1. For the Services described in Paragraph 2, the District agrees to pay Contractor in accordance with the method and amounts described in Exhibit B, attached hereto and incorporated herein. Total compensation under the Agreement shall not exceed a Maximum Agreement Ceiling of \$(dollars).
- 4.2. Reserved.
- 4.3. In case of changes affecting the scope of Services resulting from new findings, unanticipated conditions, or other conflicts or discrepancies, Contractor shall promptly notify the District of the identified changes and advise the District of the recommended solution. Work shall not be performed on such changes without prior written authorization of the District.

5. NOTICE TO PROCEED

- 5.1. This Agreement shall become effective upon execution of the second signature. Contractor shall commence work upon receipt of the District's Notice to Proceed, which shall be in the form of a letter signed by the District's Project Manager, as specified in Paragraph 11.1 herein. The District's Notice to Proceed will authorize the Services described in Exhibit A with ceiling prices described in Paragraph 4. No work shall commence until the Notice to Proceed is issued.
- 5.2. The District may at its option issue a Notice to Proceed for some or all of the Optional Services described in Exhibit A. Compensation for Optional Services shall be in accordance with the method and amounts described in Exhibit B.

6. SECURITY OF PROTECTED INFORMATION

- 6.1. Standard of Care.

- 6.1.1. Contractor acknowledges and agrees that, in the course of providing the Services, Contractor may create, receive, or have access to Protected Information. Contractor shall comply with the terms and conditions set forth in this Agreement in its creation, collection, receipt, transmission, storage, disposal, use, and disclosure of Protected Information and be responsible for any unauthorized creation, collection, receipt, transmission, access, storage, disposal, use, or disclosure of Protected Information under its control or in its possession by all Authorized Persons. Protected Information is deemed to be the property of the District and is not the property of Contractor.
- 6.1.2. In recognition of the foregoing, Contractor agrees and covenants that it shall:
 - 6.1.2.1. Keep and maintain all Protected Information in strict confidence, using such degree of care as is appropriate to avoid unauthorized access, use, or disclosure;
 - 6.1.2.2. Not create, collect, receive, access, or use Protected Information in violation of law, including state, federal, and international law;
 - 6.1.2.3. Use and disclose Protected Information solely and exclusively for the purposes for which the Protected Information, or access to it, is provided by the District to Contractor pursuant to the terms and conditions of this Agreement, and not use, sell, rent, transfer, distribute, or otherwise disclose or make available Protected Information for Contractor's own purposes or for the benefit of anyone other than the District; and
 - 6.1.2.4. Not, directly or indirectly, disclose Protected Information to any person other than Authorized Persons.

6.2. Information Security.

- 6.2.1. Contractor represents and warrants that its creation, collection, receipt, access, use, storage, disposal, and disclosure of Protected Information does and will comply with all applicable federal, state and international privacy and data protection laws, as well as all other applicable regulations and directives. Contractor will remain aware at all times of changes to all applicable federal, state and international privacy and data protection laws and promptly implement all procedures and practices as may be necessary to remain in compliance with the laws, in each case, at Contractor's sole cost and expense.
- 6.2.2. Contractor shall implement and maintain a written information security program including appropriate policies, procedures and risk assessments to safeguard data security and privacy that are reviewed by Contractor at least

annually.

- 6.2.3. Without limiting Contractor's obligations under Paragraph 6.2.1, Contractor shall implement administrative, physical, and technical safeguards to protect Protected Information from unauthorized access, acquisition, or disclosure, destruction, alteration, accidental loss, misuse, or damage that are no less rigorous than accepted industry best practices, the International Organization for Standardization's standards: ISO/IEC 27001 – Information Security Management Systems – Requirements and ISO/IEC 27002 – Code of Practice for International Security Management, the National Institute of Standards and Technology (NIST) Cybersecurity Framework or Center for Internet Security, Critical Security Controls (CSC-20), and shall ensure that all such safeguards, including the manner in which Protected Information is created, collected, accessed, received, used, stored, processed, disposed of, and disclosed, comply with applicable data protection and privacy laws, as well as the terms and conditions of this Agreement.
- 6.2.4. Reserved.
- 6.2.5. At a minimum, Contractor's safeguards for the protection of Protected Information shall include: (i) limiting access of Personal Information to Authorized Persons; (ii) securing, both physically and technologically, business facilities, data centers, paper files, servers, backup systems, and computing equipment, including, but not limited to, all mobile devices and other equipment with information storage capability; (iii) implementing network, application, database, and platform security; (iv) securing information transmission, storage, and disposal; (v) implementing authentication and access controls within media, applications, operating systems, and equipment; (vi) encrypting Highly-Sensitive Personal Information stored on any media; (vii) encrypting Highly-Sensitive Personal Information transmitted over public or wireless networks; (viii) strictly segregating Protected Information from information of Contractor or its other customers so that Protected Information is not commingled with any other types of information; (ix) conducting risk assessments, penetration testing, and vulnerability scans and promptly implementing, at Contractor's sole cost and expense, a corrective action plan to correct any issues that are reported as a result of the testing; (x) implementing appropriate personnel security and integrity procedures and practices, including, but not limited to, conducting background checks consistent with applicable law; and (xi) providing appropriate privacy and information security training to Contractor's employees.
- 6.2.6. During the term of each Authorized Person's employment or retention through subcontract by Contractor, Contractor shall at all times cause such

Authorized Persons to abide strictly by Contractor's obligations under this Agreement. Contractor further agrees that it shall maintain a disciplinary process to address any unauthorized access, use, or disclosure of Protected Information by any of Contractor's officers, partners, principals, employees, agents, or contractors.

- 6.2.7. Within 15 days of making any material changes to Contractor's security program or administrative, physical, or technical safeguards to protect Protected Information from unauthorized access, disclosure, or use under Paragraphs 6.2.2 and 6.2.3 of this Agreement, Contractor shall notify the District of the change in writing.
- 6.2.8. Upon the District's written request, Contractor shall provide the District with a network diagram that outlines Contractor's information technology network infrastructure and all equipment used in relation to fulfilling its obligations under this Agreement, including, without limitation: (i) connectivity to the District and all third parties who may access Contractor's network to the extent the network contains Protected Information; (ii) all network connections, including remote access services and wireless connectivity; (iii) all access control measures (for example, firewalls, packet filters, intrusion detection and prevention services, and access-list-controlled routers); (iv) all backup or redundant servers; and (v) permitted access through each network connection.

6.3. Security Breach Procedures.

6.3.1. Contractor shall:

- 6.3.1.1. Upon execution of this agreement, provide the District with the name and contact information for an employee of Contractor who shall serve as the District's primary security contact and shall be available to assist the District twenty-four (24) hours per day, seven (7) days per week as a contact in resolving obligations associated with a Security Breach;
- 6.3.1.2. Notify the District of a suspected Security Breach as soon as practicable, but no later than twenty-four (24) hours after Contractor becomes aware of it; and
- 6.3.1.3. Notify the District of any suspected Security Breaches by reporting via email to itsecurity@ebmud.com. Once a suspected Security Breach has been confirmed, written notice should be provided to the District within twenty-four (24) hours of confirmation that a breach occurred.

- 6.3.2. Immediately following Contractor's notification to the District of a Security Breach, the parties shall coordinate with each other to investigate the Security Breach. Contractor agrees to fully cooperate with the District in the District's handling of the matter, including, without limitation: (i) assisting with any investigation; (ii) providing the District with physical access to the facilities and operations affected; (iii) facilitating interviews with Contractor's employees, agents and others involved in the matter; and (iv) making available all relevant records, logs, files, data reporting, and other materials required to comply with applicable law, regulation, industry standards, or as otherwise required by the District.
 - 6.3.3. Contractor shall, at its own expense, use best efforts to immediately contain and remedy any Security Breach and prevent any further Security Breach, including, but not limited to taking any and all action necessary to comply with applicable data security and privacy rights, laws, regulations, and standards. Contractor shall reimburse the District for all actual costs incurred by the District in responding to, and mitigating damages caused by, any Security Breach, including all costs of notice and/or remediation.
 - 6.3.4. Contractor agrees that it shall not inform any third party of any Security Breach involving Protected Information without first obtaining the District's prior written consent, other than to inform a complaining District customer that the matter has been forwarded to the District. Further, Contractor agrees that the District shall have the sole right to determine: (i) whether notice of the Security Breach is to be provided to any individuals, regulators, law enforcement agencies, consumer reporting agencies, or others as required by law or regulation, or otherwise in the District's discretion; and (ii) the contents of such notice, whether any type of remediation may be offered to affected persons, and the nature and extent of any such remediation.
 - 6.3.5. Contractor agrees to maintain and preserve all documents, records, and other data related to any Security Breach.
 - 6.3.6. Contractor agrees to reasonably cooperate with the District in any litigation, investigation, or other action deemed necessary by the District to protect its rights relating to the use, disclosure, protection, and maintenance of the Protected Information.
- 6.4. Oversight of Security Compliance.

Upon the District's written request, to confirm compliance with this Agreement, as well as any applicable laws and industry standards, Contractor shall promptly and accurately complete a written information security questionnaire provided by the District, or a third party on the District's behalf, regarding Contractor's business practices and information technology environment in relation to all Protected

Information being handled and/or services being provided by Contractor to the District pursuant to this Agreement. Contractor shall fully cooperate with such inquiries.

6.5. Return or Destruction of Protected Information.

At any time during the term of this Agreement at the District's written request or upon the termination or expiration of this Agreement for any reason, at the District's direction Contractor shall, and shall instruct all Authorized Persons to, promptly return to the District all copies, whether in written, electronic, or other form or media, of Protected Information in its possession or the possession of such Authorized Persons, or securely dispose of all such copies, and certify in writing to the District that such Protected Information has been returned to the District or disposed of securely. Contractor shall comply with all directions provided by the District with respect to the return or disposal of Protected Information.

6.6. Contractor acknowledges that any breach of its covenants or obligations set forth in Paragraph 6 may cause the District irreparable harm for which monetary damages would not be adequate compensation and agrees that, in the event of such breach or threatened breach, the District is entitled to seek equitable relief, including a restraining order, injunctive relief, specific performance, and any other relief that may be available from any court, in addition to any other remedy to which the District may be entitled at law or in equity. Such remedies shall not be deemed to be exclusive but shall be in addition to all other remedies available at law or in equity, subject to any express exclusions or limitations in this Agreement to the contrary.

7. BREACH OF AGREEMENT

7.1. The following shall be considered a material breach of this Agreement:

7.1.1. Contractor's failure to comply with any of the security requirements of Paragraph 6.

7.1.2. The failure of the Services to comply with the technical specifications of Exhibit A.

7.1.3. Contractor's failure to implement the Services in accordance with the schedule provided in Exhibit A.

7.1.4. Contractor's failure to comply with any warranty provision of Paragraph 14.

7.1.5. Contractor's failure to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Services in accordance with this Agreement.

7.1.6. Contractor's failure to provide the District with a written plan to cure a

District identified default as specified in Paragraph 7.2, or the District's reasonable refusal to accept Contractor's plan for curing its breach; or Contractor does not fully carry out an accepted plan to cure.

- 7.1.7. Contractor's abandonment of the Services. Abandonment is conclusively presumed when the District requests a written plan to cure a breach and Contractor does not submit the plan within five (5) business days of the District's request.
 - 7.1.8. Contractor's insolvency or filing for relief under the bankruptcy laws of the United States.
 - 7.1.9. Contractor's general assignment of this Agreement for the benefit of its creditors or failure to pay its debts as the same become due.
 - 7.1.10. Appointment of a receiver to take charge of Contractor's property.
 - 7.1.11. Contractor's disregard of legal requirements of agencies having jurisdiction over the Services, Contractor, or the District.
 - 7.1.12. Contractor's breach of any other material obligation under this Agreement.
- 7.2. If the nature of any of the breaches identified in Paragraphs 7.1.1 through 7.1.12 is such that the breach may be cured, the breach shall not be considered a material breach if, after written notice from the District, the District is presented with a satisfactory plan to cure the breach within five (5) days and the breach is cured within thirty (30) days, except that any failures related to Contractor's information security obligations under Paragraph 6 shall be cured within five (5) days.
- 7.3. Upon any material breach of this Agreement, the District shall have the following remedies, at its option:
- 7.3.1. The District may terminate the Agreement immediately in writing for cause under Paragraph 8.1.
 - 7.3.2. The District may provide notice in writing to Contractor of its intent to terminate this Agreement for cause, with the notice providing an effective termination date. The time between the date of the notice and the effective date of termination shall be the "Notice Period."
 - 7.3.3. During any Notice Period:
 - 7.3.3.1. Contractor shall continue to retain the District Information, or solely such specific databases or other collections or articles of District Information as the District may allow;

- 7.3.3.2. Contractor shall continue to provide the Services as though this Agreement was still in force;
 - 7.3.3.3. The District shall pay in full all undisputed compensation due Contractor as of the notice date and shall pay monthly compensation to Contractor for retention of the Services, in accordance with the Agreement;
 - 7.3.3.4. Contractor will fully cooperate with the District so as to enable the District to transition the District Information and the Services to a District platform or a platform provided by a third party.
- 7.3.4. The District shall have the right, through written notice to Contractor, to extend the Notice Period or terminate the Agreement earlier than the Notice Period.

7.4. The remedies in this Paragraph 7 shall not be deemed to be exclusive but shall be in addition to all other remedies available in this Agreement or at law or in equity.

8. TERMINATION OF AGREEMENT

8.1. Termination by the District for Cause:

8.1.1. District may terminate Contractor's right to proceed under this Agreement, in whole or in part, for cause at any time after the occurrence of any material breach under Paragraph 7.

8.2. Termination by the District for Convenience:

8.2.1. The District may, at its option, and for its convenience, terminate this Agreement at any time by giving a minimum 30 day written notice to Contractor specifying the effective date of termination. Upon such termination, Contractor agrees to comply with the notice and further agrees to waive any claims for damages, including loss of anticipated profits, on account of the termination; and, as the sole right and remedy of Contractor, the District shall pay Contractor as set forth below.

8.2.2. Upon receipt of a notice of termination for convenience, Contractor shall, unless the District directs otherwise, do the following:

8.2.2.1. Immediately discontinue its performance of the Agreement to the extent specified in the notice.

8.2.2.2. Place no further orders or subcontracts for equipment, services or software, except as may be necessary for completion of a portion of the Services that is not discontinued or that is necessary for an

orderly cessation of the Services.

8.2.2.3. Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Services, except for any subcontracts for which the District has requested assignment.

8.2.2.4. Thereafter, perform only such Services as may be necessary to preserve and protect work done in furtherance of the Services already in progress.

8.3. Reserved.

8.4. Effect of Termination:

8.4.1. Upon termination, the obligations of the Agreement shall continue as to portions of the Services already performed and, subject to Contractor's obligations under Paragraph 8.2.2, as to bona fide obligations assumed by Contractor prior to the date of termination.

8.4.2. Upon termination of this Agreement the District may, at its election and by notice to Contractor, accept the assignment of any or all of Contractor's subcontracts and then complete the Services by any method the District may deem expedient.

8.4.3. Reserved.

8.4.4. If this Agreement is terminated, Contractor shall be entitled to compensation for services satisfactorily performed up to the effective date of termination; provided however, that the District may condition payment of such compensation upon Contractor's delivery to the District of any and all District Information, documents, photographs, computer software, digital files, and other materials provided to Contractor or prepared by Contractor for the District under this Agreement. Payment by the District for the services satisfactorily performed to the effective date of termination shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Agreement and Contractor shall be entitled to no other compensation or damages and expressly waives same.

8.4.5. Termination of this Agreement shall not relieve Contractor of any warranty obligations under Paragraph 14.

8.4.6. No termination or action taken by the District after termination shall prejudice any other rights or remedies of the District provided by law or by this Agreement.

8.4.7. If, after termination for other than convenience, it is determined that Contractor was not in material breach of this Agreement, or that the material breach was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for convenience pursuant to Paragraph 8.2.

9. CHANGES

- 9.1. Changes in the Services can only be made by way of an approved Change Order. The District Project Manager shall have authority to approve the Change Order. If the change causes an increase or decrease in the Maximum Cost Ceiling a change in the time for performance under the Agreement, or other substantial modifications to the Services, the District Project Manager shall memorialize these changes as an amendment to the Agreement.
- 9.2. The District reserves the right to make changes in the Services specified in Exhibit A or to omit any item or portion of the Services, as may be deemed by the District Project Manager to be necessary or advisable and to order such extra work as may be determined by the District Project Manager to be required for the proper execution and completion of the Services. Any such changes will be ordered in writing by the District Project Manager. The determination of the District Project Manager on all questions relating to changes, including extra work, shall be conclusive and binding.
- 9.3. If Contractor agrees with the terms and conditions of the approved Change Order, Contractor shall indicate its acceptance by signing the original copy and returning it to the District Project Manager with reasonable promptness and in such sequence as to not delay the Services or activities of the District or of separate contractors, whichever is sooner. Payment in accordance with the terms and conditions set forth in the executed Change Order shall constitute full compensation for all Services included in the Change Order and the District will be released from any and all claims for direct, indirect, and impact expenses and additional time impact resulting from the Services.
- 9.4. If Contractor disagrees with the terms and conditions of the approved Change Order, Contractor shall indicate specific areas of disagreement and return the approved Change Order to the District Project Manager with a detailed written dispute. No payment will be made on the disputed work until the approved Change Order is returned to the District Project Manager. However, whether or not Contractor agrees with the terms and conditions of an approved Change Order, Contractor shall immediately revise its sequence of operations as required to facilitate timely completion of the changed work and shall proceed with the revised work sequence.

10. DELAYS

- 10.1. Contractor shall take reasonable precautions to foresee and prevent Delay Events in

execution of the Services.

- 10.1.1. When Contractor foresees a Delay Event, and upon the occurrence of a Delay Event, Contractor shall immediately notify the District Project Manager of the probability or the actual occurrence of a delay, and its cause. Within 15 days from the identification of a Delay Event, Contractor shall provide the District Project Manager with a detailed written description of the delay, its cause, its impact on the Services and the project schedule, and Contractor's mitigation plans. Failure to provide the notification required above shall operate as a waiver of Contractor's right to any additional time or compensation resulting from the Delay Event for whatever cause.
- 10.1.2. The District Project Manager will investigate the facts and ascertain the extent of the Delay Event, and the District Project Manager's findings regarding the Delay Event shall be final and conclusive, except in the case of gross error on the part of the District Project Manager. An extension of time must be approved by the District Project Manager to be effective.
- 10.1.3. The granting, or acceptance, of extensions of time to complete the Services will not operate as a release of Contractor or the surety on Contractor's faithful performance bond.
- 10.1.4. With respect to all Delay Events (Compensable, Excusable, or Inexcusable), Contractor shall reschedule the Services and revise its operations, to the extent possible, to mitigate the effects of the Delay Event.
- 10.2. For Inexcusable Delay Events, Contractor shall not be entitled to an extension of time or additional compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the Inexcusable Delay Event.
- 10.3. For Excusable Delay Events, the District Project Manager will grant Contractor an extension of the time to perform under the Agreement, but Contractor shall not be entitled to any additional compensation for any loss, costs, damages, expenses or liability resulting directly or indirectly from the Excusable Delay Event.
- 10.4. For Compensable Delay Events, the District Project Manager will grant Contractor an extension of the time to perform under the Agreement and compensation in an amount that represents Contractor's actual direct costs incurred as a direct result of the compensable delay. Contractor may recover its direct costs only and may not recover (and waives) all other types of indirect, consequential, special and incidental damages.
- 10.5. For Concurrent Delay Events, the following rules apply:
 - 10.5.1. If one or more of the Concurrent Delay Events are Excusable or

Compensable, the period of concurrent delay will be treated as an Excusable Delay Event.

10.5.2. If all of the Concurrent Delay Events are Inexcusable, the period of concurrent delay will be treated as an Inexcusable Delay Event.

11. PROJECT MANAGERS

- 11.1. The District designates [District Project Manager's name] as its Project Manager, who shall be responsible for administering and interpreting the terms and conditions of this Agreement, for matters relating to Contractor's performance under this Agreement, and for liaison and coordination between the District and Contractor. Contractor may be requested to assist in such coordinating activities as necessary as part of the services. In the event the District wishes to make a change in the District's representative, the District will notify Contractor of the change in writing.
- 11.2. Contractor designates [Contractor's Project Manager's name] as its Project Manager, who shall have immediate responsibility for the performance of the work and for all matters relating to performance under this Agreement. Any change in Contractor-designated personnel or subconsultants shall be subject to approval by the District's Project Manager.

12. INSURANCE

- 12.1. Contractor shall take out and maintain during the life of this Agreement all the insurance required in this Paragraph 12, and shall submit certificates for review and approval by the District. The Notice to Proceed shall not be issued, and Contractor shall not commence work, until such insurance has been approved by The District. The certificates shall be on forms provided by the District. Acceptance of the certificates shall not relieve Contractor of any of the insurance requirements, nor decrease the liability of Contractor. The District reserves the right to require Contractor to provide insurance policies for review by the District.
- 12.2. Required Coverage. At all times during the Term, Contractor shall procure and maintain, at its sole cost and expense, insurance coverage for the specified duration and in the following types and amounts:
- 12.2.1. Commercial General and Automobile Liability Insurance.
- 12.2.1.1. Contractor shall take out and maintain during the life of the Agreement Automobile and General Liability Insurance that provides protection from claims which may arise from operations or performance under this Agreement. If Contractor elects to self-insure (self-fund) any liability exposure during the Term above

\$50,000, Contractor is required to notify the District immediately. Any request to self-insure must first be approved by the District before the changed terms are accepted. Contractor shall require any subconsultant to provide evidence of liability insurance coverages

12.2.1.2. The amounts of insurance coverages shall not be less than the following:

12.2.1.2.1. \$2,000,000/Occurrence, Bodily Injury, Property Damage – Automobile.

12.2.1.2.2. \$2,000,000/Occurrence, Bodily Injury, Property Damage – General Liability.

12.2.1.3. The following coverages or endorsements must be included in the policy(ies):

12.2.1.3.1. The District, its Directors, Officers, and Employees are Additional Insureds in the policy(ies) as to the work being performed under this Agreement.

12.2.1.3.2. The coverage is Primary and non-contributory to any other insurance carried by District.

12.2.1.3.3. The policy(ies) cover(s) contractual liability.

12.2.1.3.4. The policy(ies) is/are written on an occurrence basis.

12.2.1.3.5. The policy(ies) cover(s) District's Property in Contractor's care, custody and control.

12.2.1.3.6. The policy(ies) cover(s) personal injury (libel, slander, and wrongful entry and eviction) liability.

12.2.1.3.7. The policy(ies) cover(s) explosion, collapse and underground hazards.

12.2.1.3.8. The policy(ies) cover(s) products and completed operations.

12.2.1.3.9. The policy(ies) cover(s) use of owned, non-owned and hired automobiles.

12.2.1.3.10. The policy(ies) and/or a separate pollution liability policy(ies) shall cover pollution liability for claims

related to the release or the threatened release of pollutants into the environment arising out of or resulting from Contractor's performance under this agreement.

12.2.1.3.11. The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to the District at the address above.

12.2.2. Worker's Compensation Insurance for all of Contractor's employees on the project. In lieu of evidence of Workers Compensation Insurance, the District will accept a Self-Insured Certificate from the State of California. Consultant shall require any subconsultant to provide it with evidence of Workers Compensation Insurance.

Waiver of Subrogation. Workers' Compensation insurance must contain a waiver of subrogation endorsement providing that each insurer waives any rights of recovery by subrogation, or otherwise, against the District, its directors, officers, officials, agents, volunteers, and employees. Consultant shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.

12.2.3. Professional Liability and Technology, Media, Network Security & Privacy Coverage. Covering the liability for financial loss due to any negligent act, error, or omission related to professional services performed in connection with this Agreement or for liability arising out of rendering or failure to render technology services; failure of network security; and failure to handle, manage, store, destroy or otherwise control confidential or personal information, in a minimum amount of \$2,000,000.

If Coverage is written on a claims-made form, the following shall apply:

12.2.3.1. The retroactive date must be shown, and must be before the date of the Agreement or the beginning of the Services.

12.2.3.2. Insurance must be maintained and evidence of insurance must be provided for a minimum of three (3) years after completion of the Services.

12.2.3.3. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date prior to the effective date of the Agreement, Contractor must purchase an extended period of coverage for a minimum of three (3) years after completion of the Services.

12.2.3.4. Insurance shall include prior acts coverage sufficient to cover the Services under this Agreement.

12.3. Policy Terms. All insurance policies required pursuant to this Paragraph 12 shall:

12.3.1. Be issued by insurance companies;

12.3.2. Provide that such insurance carriers give the District at least thirty (30) days' prior written notice of any cancellation or non-renewal of, or material change in, the coverage, scope, or amount of such policy and, prior to any such cancellation, non-renewal, or material change in coverage, Contractor shall have new insurance policies in place that meet the requirements of this Paragraph 12;

12.3.3. Waive any right of subrogation of the insurers against the District;

12.3.4. Provide that such insurance be primary insurance and any similar insurance in the name of and/or for the benefit of the District shall be excess and non-contributory; and

12.3.5. Name the District, its Directors, Officers, and Employees as additional insureds.

12.4. Non-Waiver. This Paragraph 12 is not intended to and shall not be construed in any manner as to waive, restrict, or limit the liability of Contractor for any obligations under this Agreement (including Contractor's obligation to indemnify, defend and hold harmless the District).

13. INDEMNIFICATION

13.1. General Indemnification. Contractor expressly agrees to defend, indemnify, and hold harmless the District and its Directors, officers, agents and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys' fees, arising out of or pertaining or relating to Contractor's, its associates', employees', representatives', subconsultants', or other agents' negligence, recklessness, or willful misconduct, in the operation and/or performance under this Agreement.

13.2. Security Breach Indemnification. Contractor expressly agrees to defend, indemnify, and hold harmless the District and its Directors, officers, agents and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys' fees, arising out of or pertaining or relating to Contractor's, its associates', employees', representatives', subconsultants', or other agents' failure to comply with any of the Security provisions of Paragraph 6 of this Agreement.

14. WARRANTIES AND REMEDIES

14.1. Contractor warrants that the Services:

14.1.1. Will conform to and perform in accordance with the requirements of this Agreement, including the Security provisions of Paragraph 6, and any specifications set forth in Exhibit A;

14.1.2. Will be performed in a professional and workmanlike manner in accordance with industry standards and practices for similar services, using personnel with the requisite skill, experience, and qualifications, devoting adequate resources to meet its obligations under this Agreement;

14.1.3. Will be provided free from harmful or malicious code;

14.1.4. Will be provided in compliance with all applicable laws; and

14.1.5. Will not infringe, misappropriate, or otherwise violate any Intellectual Property Right or other right of any third party.

14.2. In the event of any Security Breach or if the Services fail to comply with the warranties as stated in Paragraph 14, in addition to any equitable remedies provided in Paragraphs 6 and 7, the District shall be entitled to any resulting direct and indirect damages.

14.3. Reserved.

14.4. Except for the express warranties provided in this Paragraph 14, each Party hereby disclaims all warranties, whether express, implied, statutory, or otherwise under or in connection with this Agreement or any subject matter hereof.

14.5. To the extent the provisions of this Paragraph 14 conflict with any warranties, disclaimers, limitations of liability or exclusions of remedies included in any license or terms and conditions document provided to the District by Contractor or Contractor's, partners, contractor's or agents in support of the Services, the provisions of this Paragraph 14 shall govern.

15. NOTICES

15.1. Any notice that the District may desire or is required at any time to give or serve Contractor may be delivered personally, or be sent by United States mail, postage prepaid, addressed to:

[Contractor's firm's name]

[address]

Attention: [contact, usually Contractor's project manager],

or at such other address as shall have been last furnished in writing by Contractor to

the District.

- 15.2. Any notice which Contractor may desire or is required at any time to give or serve upon the District may be delivered personally at EBMUD, 375 11th Street, Oakland, CA 94607-4240, or be sent by United States mail, postage prepaid, addressed to:

[District position, not a specific name]

P.O. Box 24055, MS [mailstop]

Oakland, CA 94623-1055

or at such other address as shall have been last furnished in writing by the District to Contractor.

- 15.3. Such personal delivery or mailing in such manner shall constitute a good, sufficient and lawful notice and service thereof in all such cases.

16. CONTRACT EQUITY PROGRAM COMPLIANCE

- 16.1. Contractor expressly agrees that this Agreement is subject to the District's Contract Equity Program ("CEP"). Contractor is familiar with the District's CEP and Equal Opportunity Guidelines, and has read and understood all of the program requirements. Contractor understands and agrees to comply with the CEP and all requirements therein, including each of the Good Faith Efforts. Contractor further understands and agrees that non-compliance with the CEP requirements may result in termination of this Agreement.
- 16.2. Designated CEP compliance for the duration of this Agreement is listed in Exhibit C, which is attached hereto and incorporated herein. Contractor shall maintain records of the total amount actually paid to each subconsultant. Any change of Contractor's listed subconsultants shall be subject to approval by the District's Project Manager.

17. NONDISCRIMINATION

- 17.1. There shall be no discrimination in the performance of this Agreement, against any person, or group of persons, on account of race, color, religion, creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), veteran or military status, family or medical leave status, genetic information, or sexual orientation. Contractor shall not establish or permit any such practice(s) of discrimination with reference to the Agreement or any part. Contractors determined to be in violation of this Paragraph shall be deemed to be in material breach of this Agreement.
- 17.2. **Contractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and**

prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this Agreement. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

17.3. Contractor shall include the two nondiscrimination provisions above in all subcontracts.

18. GENERAL PROVISIONS

18.1. Contractor affirms that it does not have any financial interest or conflict of interest that would prevent Contractor from providing unbiased, impartial service to the District under this Agreement.

18.2. This Agreement represents the entire understanding of the District and Contractor as to those matters contained within it. No prior oral or written understanding shall be of any force or effect with respect to those matters covered under this Agreement. This Agreement may only be modified by amendment in writing signed by each party.

18.3. This Agreement is for the sole benefit of the Parties and their respective successors and permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever, under or by reason of this Agreement.

18.4. This Agreement is to be binding on the successors and assigns of the Parties. The services to be provided under this Agreement are deemed unique and Contractor shall not assign, transfer or otherwise substitute its interest in this Agreement or any of its obligations hereunder without the prior written consent of the District.

18.5. Should any part of this Agreement be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of this Agreement, which shall continue in full force and effect, provided that the remainder of this Agreement can be interpreted to give effect to the intentions of the Parties.

18.6. In the event that any action, suit, or other legal or administrative proceeding is instituted or commenced by either Party against the other Party arising out of this Agreement, the prevailing Party shall be entitled to recover its reasonable attorneys' fees and court costs from the non-prevailing Party.

18.7. Multiple copies of this Agreement may be executed by the Parties and the Parties agree that the Agreement on file at the District is the version of the Agreement that

shall take precedence should any differences exist among counterparts of the Agreement.

- 18.8. This Agreement and all matters relating to it shall be governed by the laws of the State of California.
- 18.9. Contractor, its employees, subcontractors, and agents shall not refer to the District, or use any logos, images, or photographs of the District for any commercial purpose, including, but not limited to, advertising, promotion, or public relations, without the District's prior written consent. Such written consent shall not be required for the inclusion of the District's name on a customer list.
- 18.10. The District's waiver of the performance of any covenant, condition, obligation, representation, warranty or promise in this agreement shall not invalidate this Agreement or be deemed a waiver of any other covenant, condition, obligation, representation, warranty or promise. The District's waiver of the time for performing any act or condition hereunder does not constitute a waiver of the act or condition itself.
- 18.11. The rights and remedies of the District provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Agreement.
- 18.12. The provisions of Paragraphs 2.5, 13 and 14 shall survive any termination of this Agreement.



Preliminary Security Information Gathering (PSIG)

As a component of the supplemental RFP process, EBMUD will be performing a qualifying evaluation of each of the RFP respondents Information Protection program. Please respond to the following questions, keeping your responses as brief as possible, please limit your responses to no more than five (5) pages in total. If your organization is selected you will have the opportunity to provide more in-depth responses during the formal security review.

A. Risk Management

Objective: Organizations should create and maintain a continuous process for IT and Infrastructure risk management to identify, quantify, and prioritize risks against defined risk acceptance levels and objectives relevant to the organization.

1. Describe your organization's IT Risk Governance
2. Describe your organization's IT Risk Life Cycle

B. Information Security Policy

Objective: Organizations should provide management direction and support for information security in accordance with business requirements and relevant laws and regulations. They should set a clear policy direction in line with business objectives and demonstrate support for, and commitment to, information security through the issue, acceptance and maintenance of an information security policy across the organization.

1. Describe your organization's Information Security Policy
2. Describe how the policy or policy set is reviewed and maintained, include the frequency of review

C. Information Security Organization

Objective: Organizations should establish a management framework to control and manage the information security organization. This should include the protection of organizational information through the use of employee confidentiality agreements and the addition of clauses in dependent service provider contracts or agreements.

1. Describe the size and structure of your Information Security department.
2. Does your organization rely on dependant service providers? If so, how is their security vetted by your organization?

D. Physical and Environmental Security

Objective: Organizations should take appropriate steps to prevent unauthorized physical access, as well as accidental and intentional damage to the organizations' physical premises, systems and information. Organizations should also take appropriate steps to protect against environmental and systems malfunctions or failures.

1. Describe the physical controls in place at your data center(s)
2. Describe the environmental controls in your data center(s)



Preliminary Security Information Gathering

E. Operational Security

Objective: Organizations should maintain documented operating procedures and technological controls to ensure the effective management, operation, integrity and security of their information systems and data.

1. Describe the operational controls in place
2. How does your organization log and monitor system and network activity?
3. Describe your intrusion detection methodology
4. Describe your organization's data backup and restoration process
5. Describe your organization's change control process

F. Access Control

Objective: Organizations should ensure sufficient control over access to information, including controlled access to target data and information processing systems and facilities. These controls should be based on security and business requirements, and should follow both industry best practices and internal policies.

1. Describe your organization's access control policy
2. How does your organization handle privilege delegation and separation of duties?
3. How does your organization handle inactive accounts and access revocation?

G. Software Development and Maintenance

Objective: Organizations should utilize a comprehensive application security program to help ensure that external high-risk applications are consistent with industry security requirements. This should include full application compliance testing and software development reviews.

1. Describe your Software Development Lifecycle
2. Describe your application vulnerability assessment methodology
3. Describe your application and system patching strategy.
4. What is the frequency of application and system security review?

H. Incident management

Organizations' incident response programs should include formal event reporting and escalation procedures that should be clearly communicated throughout the organizations, and should include the active participation of incident response members with clearly defined roles and responsibilities.

1. Describe your incident management program

I. Business Continuity

Objective: Organizations should incorporate business continuity considerations into the overall design of their business model to mitigate the risk of service disruptions and the impacts of those within the supply chain. This should include an enterprise-wide, process-oriented approach that considers technology, business operations, testing, and communication strategies that are critical to business continuity planning for the entire business.

1. Describe your Organization's Business Continuity program
2. Has your Organization performed a recent Business Impact Analysis?
3. Does your organization have a current Threat Assessment?
4. How often is your business continuity plan tested?



Preliminary Security Information Gathering

J. Regulatory Compliance

Objective: Organizations should ensure compliance of information systems with the organizational security policies and standards to include checking systems regularly against compliance with security implementation standards and regulatory requirements.

1. How does your organization ensure compliance with internal policies and standards?
2. How do you ensure compliance with Federal, State, and local laws?

K. Privacy

Objective: Organizations should establish a management framework to control and manage their privacy program. This should include the overall management of the privacy program within the organization and with all third parties that have access to target privacy data. The privacy program should include: individuals responsible for the creation, oversight and maintenance of the program; all third parties meeting their commitments under the organization's business requirements, privacy applicable law, policy and industry best practices; and the protection and privacy of target privacy data through its life cycle of collection, storage, usage, sharing, transferring, securing, retention and destruction.

1. Describe your organization's Privacy program

EXHIBIT F

BOND FORMS



DATE _____

PAYMENT BOND

CONTRACTOR (Name and California address where service may be effected)

SURETY (Name and California address where service may be effected)

AMOUNT OF BOND (Sum in words and figures)

CONTRACT DOCUMENTS (As named in the Contract)

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, WHEREAS, the contractor named above, hereinafter called the Contractor, has this day entered into a Contract with East Bay Municipal Utility District, hereinafter called the District, to perform and complete the work set forth in the Contract Documents named in the Contract, all now on file in the office of the Secretary of the District, as will more fully appear by reference to said Contract, which is made a part hereof; and

WHEREAS, Sections 9550 to 9566 inclusive of the Civil Code of the State of California, and any amendments thereof, require contractors upon public work to file with the body by whom such contract was awarded a good and sufficient bond to secure the claims to which reference is made in said sections, NOW THESE PRESENTS

WITNESSETH: That the Contractor, as Principal, and the Surety named above, as Surety, are held and firmly bound unto any and all materialmen, persons, firms, or corporations furnishing materials, provisions, or other supplies used in, upon, for, or about the performance of the work contracted to be done, and to all persons, firms or corporations renting or hiring implements or machinery for or contributing to the said work to be done and to all persons who perform work or labor of any kind or nature thereon, or in connection therewith, and to all persons who supply both work and materials, in the sum entered on the first page hereof, lawful money of the United States of America, being not less than the total amount payable by the terms of said Contract, for which payment well, truly and promptly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly, and severally, firmly by these presents.

PAYMENT BOND

The condition of the above obligation is such that if the Contractor, or the Contractor’s subcontractors, fail to pay for any materials, provisions or other supplies used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, the Surety will pay for the same, in an amount not exceeding the sum specified in this Bond, provided that any and all claims hereunder shall be filed and proceedings had in connection therewith as required by the provisions of said Sections 9550 to 9566 inclusive of the Civil Code of the State of California, and any amendments thereof: PROVIDED ALSO, that in case suit is brought upon this Bond a reasonable attorney’s fee shall be awarded by the court to the prevailing party in said suit, said attorney’s fee to be fixed as costs in said suit, and to be included in the judgment therein rendered.

No prepayment or delay in payment and no change, extension, addition, or alteration of any provision of said Contract or Contract Documents agreed to between the Contractor and the District, and no forbearance on the part of the District, shall operate to release the Surety from liability on this Bond, and consent to make such alterations without further notice to or consent by the Surety is hereby given, and the Surety hereby waives the provisions of Section 2819 of the Civil Code of the State of California.

Dated the day and year entered on the first page hereof.

Each signator to this bond hereby declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Contractor

By _____

*Title _____

By _____

**Title _____

(SEAL OF SURETY)

Surety

By _____

Title _____

Note: The signature of the Surety on this bond must be acknowledged before a Notary Public. An executed Power of Attorney indicating that the Surety’s representative is authorized to bind the Surety must accompany this bond.

The foregoing Bond was accepted and approved this _____ day of _____, 20 _____

_____, East Bay Municipal Utility District

Specifications / Proposal No. _____

*If corporation, Corporate President or CEO; if Partnership, Partner.
**Corporate Secretary or financial officer.

EXHIBIT G

SPECIFIC REQUIREMENTS, SCOPE, AND DELIVERABLES

SPECIFIC REQUIREMENTS, SCOPE, AND DELIVERABLES

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OVERVIEW

The DISTRICT, performing under the requirements of a federal Consent Decree, is implementing an investigation program for the identification of inflow and infiltration (I&I) within the DISTRICT’s regional wastewater collection system that is owned and operated by Satellite Agencies. The Satellite Agencies include the cities of Alameda, Albany, Berkeley, Emeryville, Oakland, and Piedmont, plus Stege Sanitary District, which serves El Cerrito, Kensington and portions of Richmond.

Investigations will be utilized to locate specific sources of I&I and then, based on the information collected, quantify each source’s I&I contribution. The investigation methodologies will vary throughout the year based on wet weather activity. Dry weather investigation services will predominantly occur from May through October; dry weather activities include, but are not limited to, smoke testing, mainline inspections, manhole

inspections, dye testing, and conductivity monitoring. Rainy season investigation services will predominately occur from November through April; wet weather activities include, but are not limited to, flow and level monitoring, precipitation monitoring, time-lapse manhole camera inspections, mainline inspections, and flow isolation investigations. Many investigative services may be performed in both dry and rainy season.

The DISTRICT will utilize a ranked roster for each Bid Item. The amount of work to be performed under each Bid Item is currently uncertain. The quantity and location of the investigation is determined by the results of previous investigations. As such, selection to be on the roster does not guarantee, either expressed or implied, any amount of work to be allocated for each selected CONTRACTOR/CONSULTANT or for each Bid Item included herein.

When work is available for a specific Bid Item, the DISTRICT will notify the highest ranked bidder (General Services by lowest cost and Professional Services by most qualified bidder) on the roster of the availability of the work, including the quantity of work to be performed and the anticipated schedule. Please note, the specific location of the work will not be disclosed prior to CONTRACTOR/CONSULTANT accepting work, though the DISTRICT will attempt to aggregate work into concentrated areas. The CONTRACTOR/CONSULTANT will have 48-hours to respond via email stating their availability to undertake the work or portion of the work. If a CONTRACTOR/CONSULTANT waives participation in a given work request, they will not be disqualified from future work efforts. In this case, EBMUD will contact the next highest ranked bidder, who will have 48-hours to respond via email stating their availability to undertake the work. This process will repeat until all of the work requested has been accepted or all CONTRACTORS/CONSULTANTS have been notified. Once all of the work has been accepted, the DISTRICT will then segment the work to match the quantities claimed per CONTRACTOR/CONSULTANT into separate work efforts and will notify the CONTRACTOR/CONSULTANT(s) of their specific work locations with a Notice to Proceed (NTP). Failure to meet an agreed-upon schedule after accepting work may disqualify the CONTRACTOR/CONSULTANT from future work.

The CONTRACTOR/CONSULTANT is required to keep track and follow the standards and specifications (i.e., permitting, business license, traffic control, access, notifications, etc.) of the local jurisdiction and make adjustments, as necessary, to maintain compliance with them. CONTRACTOR/CONSULTANT is required to remove all equipment (excluding any equipment intended to be installed for long term monitoring) from the investigation sites at the end of each work day. No travel compensation will be provided for any services.

See below for general requirements.

GENERAL REQUIREMENTS

BUSINESS LICENSES

CONTRACTOR/CONSULTANT shall be responsible for having appropriate business licenses for where work will take place. The DISTRICT will not reimburse CONTRACTOR/CONSULTANT for costs to obtain business licenses. If CONTRACTOR/CONSULTANT does not have an appropriate business license where work has been commissioned, the CONTRACTOR/CONSULTANT shall immediately apply for a business license upon receipt of the Notice to Proceed.

PERMITS

CONTRACTOR/CONSULTANT shall be responsible for obtaining all necessary work permits (e.g. encroachment permit). Permit costs paid by the CONTRACTOR/CONSULTANT will be reimbursed by the DISTRICT; for reimbursement, CONTRACTOR/CONSULTANT shall invoice the DISTRICT and enclose a copy of any permit invoice and proof of payment. The DISTRICT, however, will not separately reimburse the CONTRACTOR/CONSULTANT for costs associated with preparing and procuring permit documents (i.e. time spent preparing appropriate traffic control plans, time spent at the municipality's permit counter, etc.).

TRAFFIC CONTROL AND SAFETY

CONTRACTOR/CONSULTANT is responsible for providing standard traffic control for all work. For sites requiring extensive traffic control (traffic control requiring more than standard traffic control plans from the California Manual on Uniform Traffic Control Devices, CA MUTCD), a scope clarification must be submitted by the CONTRACTOR/CONSULTANT to the DISTRICT prior to use of extensive traffic control. Reimbursement for scope clarifications are only payable for items in which approval has been provided by the DISTRICT prior to any associated work performed by the CONSULTANT.

As the DISTRICT's CONTRACTOR/CONSULTANT, one of your obligations is to ensure the safety of yourself and the public. Follow appropriate safety procedures at ALL times (i.e., wear proper personal protection equipment, use proper railings/cones to guard manhole opening, follow proper traffic control procedures, etc.). Furthermore, be sure to carry proper professional identification with you at all times.

Confined space entry may be required for some Bid Items. Anyone making confined space entry must be certified and follow appropriate industry best practices.

SCOPE CLARIFICATIONS

Scope clarifications may be submitted electronically for work that falls out of the defined scope and requirements listed in this RFP. If a scope clarification is required, CONTRACTOR/CONSULTANT shall email the DISTRICT with a description of the scope change and the cost associated with the scope clarification. Reimbursement for scope clarifications are only payable for items in which approval has been provided by the DISTRICT prior to any associated work performed by the CONSULTANT. Examples of scope clarifications may be: investigations in easements without access from public right-of-way, extensive traffic control is required, change in scope, or a lateral launcher is used for lateral inspections.

DELIVERABLES

All deliverables shall be submitted to the DISTRICT in electronic format. Submittal of only a hard copy will not be accepted. Photos must be provided in jpeg format or equivalent; videos shall be provided in MPEG format or equivalent; datasets and tables shall be provided in PDF and an editable format (e.g., .xlsx, .csv, .txt, etc.); reports and maps shall be provided in PDF format. CONTRACTOR/CONSULTANT(s) shall maintain a copy of all documentation for the duration of the Contract.

The CONTRACTOR/CONSULTANT is responsible for conducting quality assurance and quality control (QA/QC) review of all investigation data prior to submittal of deliverables. If the DISTRICT has corrections or comments on a deliverable, the CONTRACTOR/CONSULTANT shall respond and resubmit the deliverable in a timely manner. Significant delays in the DISTRICT's receipt of deliverables or revised deliverables will result in delays in payment and may result in the DISTRICT removing the CONTRACTOR/CONSULTANT from consideration for future work efforts.

Specific deliverable requirements are included with each Bid Item description.

SATELLITE NOTIFICATION

CONTRACTOR/CONSULTANT is responsible for notifying the Satellite and the DISTRICT of any imminent operational or structural issue encountered (e.g. surcharged manhole, collapsed pipe, cracked manhole lid, cross-bore, etc.) during investigations. The DISTRICT will provide a contact list for CONTRACTOR/CONSULTANT to use.

MAINTAIN ASSET CONDITION

CONTRACTOR/CONSULTANT shall ensure that all assets (manhole, mains, etc.) either remain or are restored to the same or better condition as at the start of each project. For example, if an anchor bolt was used to install equipment in a manhole, the manhole wall must be repaired to condition found prior to installation of the anchor bolt.

Manhole lids shall be re-sealed with silicon caulking each time a sealed manhole is opened.

PRIVATE PROPERTY ACCESS

CONTRACTOR/CONSULTANT shall not access private property for any investigations without prior approval of the resident and/or the DISTRICT.

If investigations are required in easements, CONTRACTOR/CONSULTANT is responsible for documenting which properties were and were not accessed, including the reason why access was not available (e.g. door locked, dog on property, etc.).

KICK-OFF MEETING

Each CONTRACTOR/CONSULTANT shall meet with the DISTRICT prior to conducting work for each Bid Item that the CONTRACTOR/CONSULTANT is ranked on. This meeting will be to discuss project goals, expectations of the CONTRACTOR/CONSULTANT, previous lessons learned, and the plan for work during the duration of this contract. The meetings will be up to two (2) hours in length and may be held either in the DISTRICT's offices (375 Eleventh Street, Oakland, CA 94607) or remotely, such as through video-conferencing or screen share. If a kick-off meeting has already been held for a CONTRACTOR/CONSULTANT for one Bid Item, follow-up kick-off meetings for other Bid Items will be held at the DISTRICT's discretion.

BID ITEM DESCRIPTIONS - GENERAL SERVICES

General Services Bid Items, their scope, and their respective deliverables include:

BID ITEMS 1 AND 2. MAINLINE INSPECTION

SCOPE/REQUIREMENTS

CONTRACTOR shall perform closed circuit television (CCTV) (Bid Item 1) and/or digital imagery scan (Bid Item 2) inspections during dry or rainy seasons on sanitary sewer mains (6" through 66"). The DISTRICT will determine the use of appropriate investigative methodology prior to the start of each project. CONTRACTOR shall use National Association of Sewer Services Companies (NASSCO) certification as the standard for data collection, evaluation, and reporting for all mainline inspections. Coding must comply with the most current NASSCO version at the time of the inspections. Additionally, camera operators and coders must have a current certification from NASSCO's Pipeline Assessment and Certification Program (PACP) with at least one year of NASSCO coding experience.

The DISTRICT may also request that mainline inspections be performed without NASSCO PACP coding. However, unless explicitly stated in writing by the DISTRICT in the Notice to Proceed, CONTRACTOR shall conduct inspections AND perform coding.

General Requirements for both CCTV and Digital Imagery Scan Inspections

The image and video resolution shall be a minimum of 1080p (1920x1080 pixels).

The camera lens must be kept clean and clear and any fogging due to oil, grease, or other water content or debris that obscures the lens. The lens shall be cleaned off before proceeding with the recording operation. The camera must remain centered in the pipe during inspection. The camera lens must be above the visible water level and may submerge only while passing through clearly identifiable line sags or surcharged mainline conditions.

Each structure-to-structure segment shall be recorded as a separate inspection. If the inspection run continues through multiple segments, a new video recording and inspection record shall be started at each structure location. CONTRACTOR shall reference provided GIS to verify segment length and to identify structures that may not be clearly visible from camera or from the street.

If an inspection of an entire structure-to-structure segment cannot be successfully performed from one manhole, a reverse setup shall be performed as a second survey. Both of these inspections shall be displayed as a single report in any viewing software or tabular report.

During mainline inspections, lighting intensity shall be adjusted to minimize glare. All pictures and recordings shall be in color, in focus, and properly illuminated with good contrast, adequate and evenly spread around 360 degrees of the sewer inside perimeter without loss of contrast.

Bid Item 1. CCTV Inspection

The CCTV camera shall be a color pan and tilt camera.

Screen text shall be clearly displayed on a contrasting background. Startup screen must include at a minimum: the project number or name, upstream and downstream manhole IDs, pipe ID, pipe diameter, location (street), date and time, and direction of survey. During inspection, the screen must show running footage (distance traveled) and observation code at each defect or feature recorded.

Audio reporting will be avoided to prevent inconsistent operator subjectivity.

The speed of travel shall be slow enough to inspect each pipe joint, junction, I&I source, or defect. The camera speed shall not exceed 0.5 feet per second (30 feet per minute). The camera speed should be steady and stop when recording features and defects. The camera shall be stopped for a minimum of 5 seconds at every lateral, broken pipe, root intrusion, or other defect or feature. If needed, the camera should be pulled back and the defect shall be re-televised to ensure a clear recording. Also, the lens and lighting shall be readjusted to ensure a clear, distinct, and properly lighted feature.

Bid Item 2. Digital Imagery Scan Inspection

The digital imagery scan camera should be a side wall scanning camera capable of capturing a continuous 360 degree color image of the wall of the sewer main being inspected. The digital imagery scan camera may have multiple cameras to capture the complete interior view of the sewer main. Due to the high resolution of the image quality, the inspections may be conducted at a higher speed than the CCTV inspection method. If the image quality is not adequate for post-inspection coding, the CONTRACTOR shall be required to repeat the survey at the CONTRACTOR'S expense. When performing NASSCO coding after the inspection, the coder must navigate through the pipe scan at a slow enough pace to be able to identify and code all features and defects, as identified by NASSCO.

A 360 view and an unfolded (flat fold) view of the inspection are required for digital imagery scan inspections.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all pipe segments to be inspected. Other information will be included, such as pipe ID, estimated total length per segment (per GIS), as well as any blank fields the CONTRACTOR is expected to fill out as part of the deliverable.
- b. Overview Map**
PDF map(s) showing all the sewer mains to be inspected.
- c. Sewer Main GIS Shapefile**
GIS shapefile of all sewer mains to be inspected.
- d. Sewer Manhole GIS Shapefile**
GIS shapefile of all adjacent manholes to the sewer mains to be inspected.
- e. PACP/MACP Deliverable and Coding Guidelines**
A list of guidelines for PACP and MACP inspections.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for these Bid Items are listed below:

a. Inspection Log

The completed Excel inspection log shall include a list of ALL pipe segments issued to be inspected. The log shall include pipe ID, upstream manhole ID, downstream manhole ID, date of inspection, surveyed pipe length (include reversal length or an entry for each inspection), total pipe length (based on GIS), pipe height/diameter, direction of survey, whether reversal inspection was performed, and an explanation if an inspection could not be attempted.

- File Name: Main_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: Main_InspectionLog_NTP0022_OAK_20160707

b. PACP Database

Microsoft Access Database with inspection data shall be recorded in accordance with the most current version of NASSCO PACP standards.

- File Name: PACP_[NASSCO version]_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: PACP_7.0_NTP0030_OAK_20181215

c. Inspection Video or Digital Imagery Scans

Inspection videos/scans and viewing software shall be submitted for surveyed sewer mains. Viewing software shall have a hyperlinked list all the inspections and coded observations for the user to navigate through the inspection video or scan.

- File/Folder Name: [Asset_ID]
- Example: SEPi19020

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Mainline inspections shall be commenced within one (1) week of permit approval. The scheduled completion date will be determined by the DISTRICT based on the total length of inspection assigned to the CONTRACTOR. All deliverables shall be submitted to the DISTRICT within four (4) weeks after inspection is completed. Payment shall be for televised footage only. If a reverse set-up is required, payment shall only be made for one full length of pipe, not to include any overlap in footage and not to exceed actual length of pipe televised.

BID ITEM 3. MAINLINE HYDRO-CLEANING

SCOPE/REQUIREMENTS

CONTRACTOR shall perform the cleaning of the sanitary sewers. The purpose of hydro-cleaning is to remove all sludge, dirt, sand, rocks, root, grease, and other solid material from the pipe, leaving residual debris of no more than 5% of the pipe diameter, which should be sufficient to facilitate mainline inspection.

CONTRACTOR shall have a debris trapping system in place prior to cleaning the sewer lines. CONTRACTOR shall remove all trapped material from the manhole at the end of the cleaning. Appropriate disposal of debris is the responsibility of the CONTRACTOR. When the cleaning of an area extends beyond one day, all collected materials must be removed and disposed of by CONTRACTOR by the end of each work day. CONTRACTOR may propose an alternative method of cleaning, which the DISTRICT may approve or reject at its sole discretion.

Hydro-cleaning performed by the CONTRACTOR shall include three (3) passes for each pipe segment, unless the 5% threshold previous stated has been reached in less passes. If cleaning cannot be complete within three (3) passes, CONTRACTOR shall submit a scope clarification request email to the DISTRICT, which includes how much additional work is required to clean the segment and the associated costs. After review of the scope clarification the DISTRICT will either approve or deny the extra work. Additional work should not commence prior to DISTRICT approval.

CONTRACTOR is required to use the appropriate nozzle or cutter head, (e.g. high velocity, water jet, root cutter, etc.), to perform the sewer cleaning as required for the specified sewer line. CONTRACTOR shall clean from the downstream manhole to the upstream manhole and pull the debris back to the downstream manhole for collection and removal. Reverse cleaning may be needed when the downstream manhole is not accessible.

CONTRACTOR is responsible for obtaining a portable DISTRICT hydrant meter and other appropriate equipment (meter reducer and hydrant spanner wrench) to use a DISTRICT hydrant to fill trucks for duration of each project. Although CONTRACTOR rents the meter, the DISTRICT will reimburse for any water costs incurred, excluding any late payment fees, with valid DISTRICT invoice.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all pipe segments to be cleaned. Information will be included, such as pipe ID, estimated total length per segment (per GIS), as well as any blank fields the CONTRACTOR is expected to fill out as part of the deliverable.
- b. Overview Map**
PDF map(s) showing all the sewer mains to be cleaned.
- c. Sewer Mains GIS Shapefile**
GIS shapefile of all sewer mains to be cleaned.
- d. Manholes GIS Shapefile**
GIS shapefile of all adjacent manholes to the sewer mains to be cleaned.
- e. Portable Hydrant Meter Permit Instructions**
Instructions for checking out a portable DISTRICT hydrant meter and associated equipment.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

- a. Inspection Log**
The completed Excel inspection log shall include a list of ALL pipe segments issued to be cleaned. The log shall include pipe ID, upstream manhole ID, downstream manhole ID, date of cleaning, pipe length, type of cleaning, removed debris quantity, an explanation if any cleaning could not be attempted on a pipe segment, and any notes on the cleaning.
 - File Name: Clean_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: Clean_InspectionLog_NTP0022_OAK_20160707
- b. Summary Map**
A summary map (PDF or GIS shapefile) shall identify either all sewer mains that were able to be cleaned OR all sewer mains that were not able to be cleaned.
 - File Name: Clean_SummaryMap_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: Clean_SummaryMap_NTP0022_OAK_20160707

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Hydro-cleaning shall be commenced within one (1) week of permit approval. The completion date will be determined by the DISTRICT and based on the cumulative length of pipe to be cleaned. All CONTRACTOR deliverables shall be submitted to the DISTRICT within four (4) weeks after cleaning is completed.

BID ITEM 4. MAINLINE INSPECTION (CCTV) WITH HYDRO-CLEANING

SCOPE/REQUIREMENTS

See Bid Items 1 and 3

DISTRICT DELIVERABLES

See Bid Items 1 and 3

CONTRACTOR DELIVERABLES

See Bid Items 1 and 3

SCHEDULE

See Bid Items 1 and 3

BID ITEM 5. MAINLINE INSPECTION (DIGITAL IMAGERY SCAN) WITH HYDRO-CLEANING

SCOPE/REQUIREMENTS

See Bid Items 2 and 3

DISTRICT DELIVERABLES

See Bid Items 2 and 3

CONTRACTOR DELIVERABLES

See Bid Items 2 and 3

SCHEDULE

See Bid Items 2 and 3

BID ITEM 6. LATERAL INSPECTION

SCOPE/REQUIREMENTS

Lateral inspections may be performed during dry or rainy season on select private sewer laterals (PSL) or short segments of small-diameter sewer mains. CONTRACTOR shall conduct lateral inspections by using a CCTV push camera from a property cleanout or other access point. CONTRACTOR is responsible for identifying the location of the PSL via the available cleanouts. Access for push camera inspection of a PSL should be through either a clean-out at the curb or at the building while access to public small-diameter mains will be accessible from a sewer manhole. If the inspection is required to be performed with a lateral launcher from the public sewer main, CONTRACTOR shall submit a scope clarification request email to the DISTRICT, which includes how much additional work is required and the associated cost. The launcher shall have pan and tilt capabilities and either CCTV or digital imagery scan will be utilized for the inspection. PSL inspections will be performed on the entire length of the private sewer lateral, from the connection point at the sewer main to the connection at the building cleanout.

CONTRACTOR shall use NASSCO certification as the standard for evaluation, data collection, and reporting for all CCTV or digital imagery scan inspections. Coding shall comply with the most current NASSCO version at the time of inspections. Additionally, camera operators and coders shall be certified by NASSCO and shall have a current certification from PACP and Lateral Assessment and Certification Program (LACP) with at least one year of NASSCO coding experience.

The camera lens shall be kept clean and clear and any fogging due to oil, grease, or other water content or debris that obscures the lens shall be cleaned off before proceeding with the recording operation. The camera lens shall remain above the visible water level and may submerge only while passing through clearly identifiable line sags or surcharged lateral conditions. The speed of travel shall be slow enough to inspect

each pipe joint, junction, I&I source, or defect. For CCTV push camera or CCTV lateral launch inspections, the camera speed should be steady and should stop when recording features and defects. All pictures and recordings shall be in color, in focus, and properly illuminated with good contrast, adequate and evenly spread around 360 degrees of the sewer perimeter without loss of contrast.

Each PSL or inspection shall be recorded as a separate inspection. Screen text shall be clearly displayed on a contrasting background. Startup screen shall include at a minimum: the project number or name, address/parcel number or asset ID, pipe diameter, location (street), date and time, and direction of survey. During inspection, the screen shall show running footage (distance traveled) and observation code at each defect or feature recorded.

The operator shall start any push camera inspection by panning around the insertion point above ground and have an audio descriptive narration of location, in order for the reviewer to understand where the inspection started. All other audio reporting will be avoided to prevent inconsistent operator subjectivity.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

a. Inspection Log

An Excel document listing any parcel(s) or sewer mains in which a lateral inspection is required. Other information will be included, such as address, APN, DISTRICT notes, as well as any blank fields the CONTRACTOR is expected to fill out during the inspection.

b. Parcel Maps

PDF map of each parcel or sewer main in which a lateral inspection is required.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

a. Inspection Log

The completed Excel inspection log shall include a list of ALL PSLs or sewer mains issued to be inspected, associated address and/or parcel number, date of inspection, surveyed length, condition of lateral, and reason inspection could not occur.

- File Name: PSL_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: PSL_InspectionLog_NTP0022_OAK_20160707

b. PACP/LACP Database

Microsoft Access Database with inspection data shall be recorded in accordance with the most current version of NASSCO PACP/LACP standards.

- File Name: LACP_[NASSCO version]_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: LACP_7.0_NTP0030_OAK_20181215

c. Inspection Video or Digital Imagery Scans

Inspection videos/scans and viewing software shall be submitted for each surveyed sewer lateral. Viewing software shall have a hyperlinked list all the inspections and coded observations for the user to navigate through the inspection video or scan.

- File/Folder Name: [Investigation ID, defined by the DISTRICT]
- Example: OAK_0105_001

d. Parcel Maps

Use DISTRICT provided PDF parcel map to document the location of the inspected PSLs, connection point to main sewer, all of its connection points to property's plumbing, and the location of any identified critical defects.

- File Name: PSL_ParcelMaps_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: PSL_ParcelMaps_NTP0030_OAK_20181215

SCHEDULE

Lateral inspections shall be commenced within two (2) weeks of the Notice to Proceed or within two (2) weeks of when the DISTRICT has obtained property access permissions. Within those two (2) weeks, the CONTRACTOR will be required to schedule inspection with the owner/responsible party for an appropriate date for performing the inspection. The scheduled completion date will be based on the number of properties that are assigned to the CONTRACTOR. All deliverables shall be submitted to the DISTRICT within four (4) weeks after all inspections are completed.

BID ITEM 7. SMOKE TESTING

SCOPE/REQUIREMENTS

CONTRACTOR shall perform smoke testing during the dry season to identify any points of exfiltration from the sanitary sewer. CONTRACTOR shall prepare and distribute notices to potentially affected residents and businesses near where smoke testing is to be performed. Advanced notifications shall be distributed to affected residents two (2) weeks before smoke testing begins. Second notices shall be distributed at least two (2) and not more than five (5) working days prior to the start of smoke testing. Advanced notices may be delivered via mailed flyer or door hanger. Second notices must be delivered via door hangers. CONTRACTOR shall use the notice templates provided by the DISTRICT. Mailers should be printed by the CONTRACTOR double sided in color on standard 8½"x11" letterhead; door hangers shall be printed double sided in color on approximately 4½"x11" 14pt card stock. CONTRACTOR shall identify and provide additional coordination and notifications to all sensitive facilities (i.e. hospitals, medical buildings, schools, day cares, nursing homes, retirement homes, handicap/convalescent homes, high rise buildings, etc.). CONTRACTOR shall also respond to questions from the public before and during smoke testing. CONTRACTOR shall remove any door hangers still on residents' doors when testing is complete.

CONTRACTOR shall provide daily email notification to individuals listed on the 'Smoke Testing Distribution List' provided by the DISTRICT regarding the area planned to be tested on the following day. Daily email notifications shall include the date, time, and a map indicating location of the smoke testing area for the subsequent day. All information shall be in the body of the email, and not included as an attachment. In addition, CONTRACTOR shall provide daily verbal notification to the local fire and police department on each day that smoke testing is to be performed prior to commencing work.

During the smoke testing, CONTRACTOR will walk the entire length of the testing area slow enough to observe all points of smoke exfiltration on both sides of the street. All observed points of exfiltration will be noted, photographed, mapped, and presented in a final electronic report. Photos shall have some indication on where the exfiltration point is (i.e. flag, marked up on PDF report, etc.). An effort shall be made to photograph points of exfiltration while smoke is still visibly exiting from the exfiltration point. Exfiltration points shall be referenced and dimensioned to a permanent structure or landmark. In the event that smoke does not travel the entire pipe reach, the setup will be reversed by setting up on the opposite manhole and re-introducing smoke.

CONTRACTOR shall also take GPS coordinates at all exfiltration and observation points. GPS coordinates shall be taken in the North American Datum of 1983 geographic coordinate system (NAD 1983 StatePlane California III FIPS 0403 Feet). Horizontal precision shall be at least ±3 feet.

The CONTRACTOR shall provide any temporary plugs, sandbags, or flow barriers as required to contain an adequate volume of smoke within the section of sewer being tested, or to limit the extent of sewer subjected to pressurized smoke. The CONTRACTOR shall monitor the resulting surcharged sewer at the manhole upstream of the section of sewer being tested, and, if needed, remove flow barrier to prevent overflow from occurring.

If smoke is observed from laterals and the property has a lower cleanout, the CONTRACTOR shall take appropriate steps to ensure the cleanout is plugged in order to determine the actual source of the smoke/exfiltration (e.g. lateral is defective versus the cleanout has a loose or missing cap).

Smoke testing shall not be performed during the rain, when ground is saturated, or in windy or foggy/overcast conditions. CONTRACTOR shall wait a minimum of 10 days after a rain event to conduct smoke testing.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

- a. Overview Map**
PDF map(s) showing all the sewer mains to be tested.
- b. Results Log Template**
An Excel template listing all the fields the CONTRACTOR is expected to fill out as part of the deliverable. The template will include descriptions for each field the CONTRACTOR needs to fill out, format notes for each field, and data validation lists (acceptable inputs for specific fields).
- c. Sewer Main GIS Shapefile**
GIS shapefile of all sewer mains to be tested.
- d. Sewer Manhole GIS Shapefile**
GIS shapefile of all adjacent manholes to the sewer mains to be tested.
- e. Advanced Notice Door Hanger and Mailer Templates**
Advanced notice to distribute to affected residents. Either the door hanger or mailer shall be distributed as a first notice to residence. Notice template will be provided in English, but Chinese and Spanish versions are available if CONTRACTOR requests.
- f. Second Notice Door Hanger Template**
Second notice to distribute to affected residents. The second notice shall be distributed as a door hanger (vs. mailed). Notice template will be provided in English, but Chinese and Spanish versions are available if CONTRACTOR requests.
- g. Notification Distribution List**
A general notification distribution list will be provided as a guide for CONTRACTOR to use for contacting pertinent Satellites, the DISTRICT, and local fire and police department staff during smoke testing.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

- a. Liquid Smoke Material Safety Data Sheet (MSDS)**
The MSDS for liquid smoke shall be sent to the DISTRICT prior to beginning work for each project.
- b. Results Log**
A completed Excel results log shall include: unique defect identifier, test date/time, nearest address, coordinates, defect/observation type, surface type, grade, smoke density, inflow severity, drainage area, pipe ID, upstream MH ID, and downstream MH ID. Notes shall be provided for each defect/observation to clarify how the smoke exfiltration behaved, any additional defect location information, etc. Log shall also include blower setup location and locations where the smoke did not travel the entire reach. Specific formats and completion directions will be provided in the Results Log template. All formats and data validation lists shall be adhered to for acceptance of deliverable.
 - File Name: SmokeTesting_ResultsLog_NTPxxxx_[satellite abbr]_[date submitted YYYYMMDD]
 - Example: SmokeTesting_ResultsLog_NTP0059_ALA_20180720
- c. Results Report**
PDF results report, separate PDF files for each defect or single file with bookmarks using IndexNum, shall include all items in the Results Log in addition to a map indicating location and photos of the defect.
 - File Name: SmokeTesting_Results_NTPxxx_[satellite abbr]_[date submitted YYYYMMDD]
 - or
 - [IndexNum, format defined by the DISTRICT]

- Example: SmokeTesting_Results_NTP0059_ALA_20180720
or
NTP0059_01-01

d. Summary Map

Summary map (PDF or GIS shapefile) shall identify all sewer mains that were smoke tested segments OR sewer mains not tested.

- File Name: SmokeTesting_SummaryMap_NTPxxxx_[satellite abbr]_[date submitted YYYYMMDD]
- Example: SmokeTesting_SummaryMap_NTP0059_ALA_20180720

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. The MSDS for liquid smoke shall be sent to the DISTRICT prior to beginning work for each project. Smoke testing shall be commenced within one (1) week of permit approval. The completion date will be determined by the DISTRICT and based on the cumulative length of pipe to be smoke tested and rain events that occur during investigation period that delay testing. All CONTRACTOR deliverables shall be submitted to the DISTRICT within four (4) weeks after smoke testing is completed.

BID ITEM 8. MANHOLE CAMERA INSPECTION WITH GPS

SCOPE/REQUIREMENTS

CONTRACTOR shall conduct manhole inspections to visually inspect the condition of sanitary sewer manholes and identify sources of inflow or infiltration using 360-degree digital scanning technologies. CONTRACTOR shall use NASSCO certification as the standard for data collection, evaluation, and reporting for all manhole inspections. Coding shall comply with the most current NASSCO version at the time of the inspections. Additionally, camera operators and coders shall have a current certification from NASSCO's Mainline Assessment and Certification Program (MACP) with at least one year of NASSCO coding experience. Manhole inspections shall be comprehensive and fully document all existing defects concerning all the components of the manhole, documenting the condition of the manhole in similar quality as Level 2 (or extensive) MACP results without requiring confined space entry.

The manhole inspection camera system shall be able to travel in both upward and downward directions. The manhole camera shall be centered within the manhole. The camera system shall provide complete coverage of the interior of the structure to allow for a complete, 360-degree view of the manhole when photos are compiled.

A 360-degree view and an unfolded (flat fold) view of the inspection are required manhole inspections.

The camera lens shall be kept clean and clear and any fogging due to oil, grease, or other water content or debris that obscures the lens. The lens shall be cleaned off before proceeding with the recording operation. Furthermore, the entire interior of the manhole shall be properly illuminated in order to ensure capturing clear and distinct imagery of the manhole. If the image quality is not adequate for post-inspection coding, the CONTRACTOR shall be required to repeat the survey at the CONTRACTOR's expense.

The image resolution shall be a minimum of 1080p (1920x1080 pixels).

CONTRACTOR shall also take GPS coordinates at each inspected manhole. GPS coordinates shall be taken at the center of each inspected manhole. GPS coordinates shall be taken in the North American Datum of 1983 geographic coordinate system (NAD 1983 StatePlane California III FIPS 0403 Feet). Horizontal precision shall be at least ± 3 feet.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all manholes to be inspected, including manhole ID as well as any blank fields the CONTRACTOR is expected to fill out as part of the deliverable.
- b. Overview Map**
PDF map(s) showing all the manholes to be inspected.
- c. Sewer Manhole GIS Shapefile**
GIS shapefile of manholes to be inspected.
- d. Sewer Main GIS Shapefile**
GIS shapefile of all adjacent sewer mains to the manholes to be inspected.
- e. PACP/MACP Deliverable and Coding Guidelines**
A list of guidelines for PACP and MACP inspections.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

- a. Inspection Log**
The completed Excel inspection log shall include a list of ALL manholes issued to be inspected. The log shall include manhole ID, date of inspection, nearest address, any general comments on inspection, and an explanation if an inspection could not be attempted.
 - File Name: MH_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: MH_InspectionLog_NTP0022_OAK_20160707
- b. MACP Database**
Microsoft Access Database with inspection data shall be recorded in accordance with the most current version of NASSCO MACP standards.
 - File Name: MACP_[NASSCO version]_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: MACP_7.0_NTP0030_OAK_20181215
- c. Inspection Digital Imagery Scans**
Inspection scans and viewing software shall be submitted for surveyed manholes. Viewing software shall have a hyperlinked list all the inspections and coded observations for the user to navigate through the inspection scan.
 - File/Folder Name: [Asset_ID]
 - Example: SES7748
- d. GPS Shapefile**
GIS shapefile with manhole inspection locations (including GPS coordinates and link to manhole lid photo) shall be submitted. GPS coordinates shall also be included in the MACP database for inspected manholes.
 - File Name: MH_GPS_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: MH_GPS_NTP0099_OAK_20191115
- e. Photos of MH Cover**
Photos of manhole covers shall be submitted for each manhole a GPS coordinate was taken.
 - Photo Folder Name: MH_GPSPHOTOS_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
 - Example: MH_GPSPHOTOS_NTP0099_OAK_20191115
 - Photo Name: [Asset_ID]
 - Example: SES7748

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Manhole inspections shall be commenced within one (1) week of permit approval. The

completion date will be determined by the DISTRICT and based on the cumulative number of manholes to be inspected. All CONTRACTOR deliverables shall be submitted to the DISTRICT within four (4) weeks after manhole inspections are completed.

BID ITEM 9. TIME LAPSE MANHOLE CAMERA INSPECTION

SCOPE/REQUIREMENTS

CONTRACTOR shall provide installation and monitoring services for time lapse manhole camera inspections. Cameras will be used to identify sources of inflow and infiltration at manhole walls and at pipe-to-manhole connections during storms. The cameras will be installed at locations identified by the DISTRICT throughout the regional wastewater collection system.

Camera shall be installed no more than eighteen (18) inches below the manhole rim and shall have fisheye or ultra-wide angle lens to capture photos of the manhole walls and invert. Time lapse imagery will be collected every 5 minutes, but should also have the capability to collect imagery at a more frequent rate. A time stamp should be recorded on each photo. All photos shall be in focus and properly illuminated with good contrast in order to view the entire manhole.

CONTRACTOR shall perform all necessary site inspection, installation, maintenance, and removal of the cameras. CONTRACTOR shall maintain the equipment weekly, ensuring that equipment is appropriately capturing imagery and has available data memory as well as sufficient battery levels for operation until the next field visit.

Equipment shall be down no longer than 48 hours after each site visit, with a total per equipment uptime to be greater than 90% for the monitoring period. At the end of the monitoring period, equipment uptimes should be determined for both the entire monitoring period and for only the wet weather periods. Wet weather periods will include any time frame during a storm event which contributes at least 0.30-inches of precipitation within a rolling twenty-four (24) hour period. Storm events will include the twenty-four (24) hours immediately following these qualifying wet weather periods. If an outage longer than two hours occurs during a storm event, then the percent uptime for that storm shall be determined to be zero, since the data would no longer be sufficient to characterize the storm response in the manhole. Adjustments shall be made to the final full months monitoring invoice based on observed uptimes.

Following completion of the monitoring period, CONSULTANT shall remove all equipment and return the manhole to as good as or better condition than the manhole was prior to the installation. For example, if an anchor bolt was used to install the equipment, repair of the manhole wall to the condition found prior to installation of the anchor bolt would be required.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all manholes cameras will be installed, including manhole ID, camera ID, location, as well as any blank fields the CONTRACTOR is expected to fill out as part of the deliverable.
- b. Overview Map**
PDF map(s) showing all the locations cameras will be installed.
- c. Sewer Manhole GIS Shapefile**
GIS shapefile of all manholes where cameras will be installed.
- d. Sewer Main GIS Shapefile**
GIS shapefile of all adjacent sewer mains to the manholes.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

a. Site Sheets

A site sheet for each camera installation shall be provided. Site sheets shall include: top-side photo of the area (site manhole lid removed and nearby landmarks or street signs present for site verification); a photo of inside the manhole; GPS coordinates of the manhole; a sketch of the orientation of the inlets and outlets present in the manhole; all pertinent site information (nearest address, camera ID, traffic condition, manhole asset ID, manhole material, manhole diameter, manhole depth, installation and removal dates, general comments on location and installation, etc.). Note: The photographs shall be taken with sufficient effort and appropriate lighting to document the condition of the manhole. North arrows shall be included on all photos included in the site sheets.

- File/Folder Name: [Investigation ID, defined by the DISTRICT]
- Example: OAK_0058_001

b. Inspection Log

The completed Excel inspection log shall include a list of ALL manholes issued to have a camera installed. The log shall include all relevant information from the Site Sheets.

- File Name: MHCamera_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: MHCamera_InspectionLog_NTP0022_OAK_20160707

c. Outage Log

The Excel outage log shall include a list of ALL installed cameras. The log shall include a chronological list for each camera of any equipment outages, reasons for outage, site visits made, what activities were performed during site visit (maintenance of camera, swapping of battery, etc.).

- File Name: MHCamera_OutageLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: MHCamera_OutageLog_NTP0022_OAK_20160707

d. Inspection Photos and Videos

Inspection photos and time lapse videos shall be submitted for each camera. Each site shall have a video for the entire monitoring period, a video comparing one peak wet day to six dry days, and a video indicating change in flow or presence of I&I. Videos and photos shall have a time stamp.

- File/Folder Name: [Investigation ID, defined by the DISTRICT]
- Example: OAK_0058_001

e. Final Report

A final report shall be submitted with the findings of the project. The final report will incorporate information collected from cameras and will document any project limitations regarding the ability to collect and data, camera equipment specifications, summary of camera uptime and outages, a summary of video observations within each manhole (reactions to wet weather and location, severity, and extent of I&I present in manhole).

- File Name: MHCamera_FinalReport_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: MHCamera_FinalReport_NTP0050_OAK_20181215

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Camera installations shall be commenced within one (1) week of permit approval. CONTRACTOR shall submit site sheets within two (2) weeks of equipment installation. CONTRACTOR shall provide all other CONTRACTOR deliverables within four (4) weeks after equipment is removed.

BID ITEMS 10 AND 11. DYE TESTING

(with CCTV, digital imagery scans, lateral, and/or manhole inspections)

SCOPE/REQUIREMENTS

CONTRACTOR shall provide dye testing services as requested by the DISTRICT to identify potential sources of I&I. Specific locations within the regional wastewater collection system and ancillary systems may be dye tested for identifying flow paths. Dyes shall be non-toxic and biodegradable and shall be used in accordance to the manufacturer's instructions. Water shall be dechlorinated prior to being placed in the storm system.

Dye testing will be conducted in combination with CCTV, digital imagery scan, or push camera inspections in addition to manhole inspections in order to properly understand the sanitary sewer and storm system connectivity. CONTRACTOR shall be able to perform appropriate visual inspection (CCTV or digital imagery scan inspections, push camera inspection, and manhole inspections) at the same time as the dye tests.

CONTRACTORS bidding on dye testing must also bid on Bid Items 1 and 2-Mainline Inspection, Bid Item 6-Lateral Inspection, and Bid Item 8-Manhole Camera Inspection. See Bid Items 1, 2, 6, and 8 for specific scope and requirement for these additional items.

If the dye test is conducted on private property, prior to testing and following direction by the DISTRICT, CONTRACTOR shall work with the property owner/responsible party to schedule the testing. The DISTRICT will be responsible for obtaining approval from property owners before the CONTRACTOR will dye test on private property.

CONTRACTOR is responsible for providing all equipment for each dye test including, but not limited to CCTV or digital imagery scan camera, manhole camera, lateral push camera, water truck and/or plastic water drums, water hose, dye, dechlorination tablets, 10"-36" plugs, etc.

CONTRACTOR is also responsible for obtaining a portable DISTRICT hydrant meter and other appropriate equipment (meter reducer and hydrant spanner wrench) to use a DISTRICT hydrant to fill trucks for duration of project. Although CONTRACTOR rents the meter, the DISTRICT will reimburse for any water costs incurred, excluding any late payment fees, with valid DISTRICT invoice.

The following methods may be used for dye testing, as determined by the DISTRICT at the start of each project:

Bid Item 10. HOSE METHOD

A hose dye test will be conducted at storm water catch basins or manholes where a storm water pipe appears to be directly connected to a sanitary sewer pipe or manhole. Hose dye tests will include running a hose with a sufficient volume and velocity of dyed and dechlorinated water down the identified storm water pipe (and not just dumped into a catch basin), waiting for the dyed water to travel down the pipe, and observing the downstream sanitary sewer and/or storm water manholes for dyed water. A video shall be recorded showing dye test set up. If dye is observed in the sanitary sewer system, CONTRACTOR shall record a video confirming dye entering the manhole. Manhole inspections shall be performed at specified storm or sanitary manholes. The manhole inspections shall be performed concurrently with the hose dye test, so that dye can be observed actively entering the sanitary system. Manhole inspections shall be performed in accordance to requirements listed in Bid Item 8.

Bid Item 11. PLUG METHOD

A plug dye test method will include plugging the storm system, filling it with dyed and dechlorinated water, waiting at least 20 minutes for saturation, and observing the sanitary system for dyed water. If dye is observed in the sanitary system, CONTRACTOR shall perform CCTV, digital imagery scan, or push camera inspection (as directed by the DISTRICT at the start of each project) on adjacent pipes and laterals to identify the source of entry for the dye into the sanitary sewer system (e.g. offset joints, defect in pipe, direct connection, lateral, etc.). Furthermore, manhole inspections shall also

be performed at the specified storm or sanitary manholes. The mainline or manhole inspections shall be performed concurrently with the plug dye test, so that dye can be observed actively entering the sanitary system. CCTV and digital imagery scan inspections shall be performed in accordance requirements listed in Bid Items 1 and 2; push camera inspections shall be performed in accordance to requirements listed in Bid Item 6; manhole camera inspections shall be performed in accordance to requirements listed in Bid Item 8. If dye is observed in the sanitary sewer system, CONTRACTOR shall record a video confirming dye entering the manhole. Additionally, a video shall be recorded showing dye test set up for all dye tests, regardless of if dye was observed in the sanitary system.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

a. Inspection Log

An excel document listing details of all dye test locations. Other information will be included, such as where dye shall be inserted, plug shall be placed, manhole to be inspected, and sewer mains to be inspected, as well as any fields the CONTRACTOR is expected to fill out as part of the deliverable.

b. Detailed Maps

PDF maps showing the locations of where dye shall be inserted, plug shall be placed, manhole to be inspected, and sewer mains to be inspected, as well as any fields the CONTRACTOR is expected to fill out in the field as part of the deliverable.

c. Sewer and Storm Mains GIS Shapefile

GIS shapefile of all sewer mains to be inspected or adjacent sewer and storm mains.

d. Sewer and Storm Manholes GIS Shapefile

GIS shapefile of all manholes to be inspected.

e. Portable Hydrant Meter Permit Instructions

Instructions for checking out a portable DISTRICT hydrant meter and associated equipment.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for these Bid Items are listed below:

a. Inspection Log

An excel document explaining results of all dye tests. Log shall include quantity of manholes inspected, quantity of mains inspected, and quantity of plug and/or hose dye test conducted. All field notes from videos and detailed maps shall be included in the Inspection Log.

- File Name: DyeTest_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: DyeTest_InspectionLog_NTP0102_OAK_20191003

b. Detailed Maps

Filled out detailed PDF maps on testing details (e.g. where dye was inserted, plug was placed, manholes inspected, etc.) and test results (i.e. confirmed connection with storm water system, sanitary manhole is actually storm manhole, etc.).

- File Name: DyeTest_DetailedMaps_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: DyeTest_DetailedMaps_NTP0102_OAK_20191003

c. Video of Test Set-Up

Video of each dye test set up showing where the dyed water is being inserted, which manholes are being observed for dye and whether or not dye is observed. Audio should also be included to indicate which site is being tested in the video, nearest address or cross-streets, and which manhole is being observed for dye. Furthermore, video operator shall indicate where dyed water is going. Video should also pan out to show nearby landmark or street sign for site verification.

- File/Folder Name: [Investigation ID, defined by the DISTRICT]
- Example: OAK_0102_044

d. Video of Positive Test

If dye is observed at the observation manhole, a new video shall be recorded to show the dye present. Video audio shall indicate the dye test site ID, which manhole dye is observed from, which manhole or catch basin the dye test was being performed at, and the likely source of the dye (i.e. directly connected to storm water system, indirectly connected, dye coming from upstream pipe, etc.). Video should also pan out to show nearby landmark or street sign for site verification.

- File/Folder Name: [Investigation ID, defined by the DISTRICT]+
- Example: OAK_0102_044+

e. Mainline Inspection Deliverables

See CONTRACTOR Deliverables section of Bid Item 1 or 2.

f. Lateral Inspection Deliverables

See CONTRACTOR Deliverables section of Bid Item 6.

g. Manhole Inspection Deliverables

See CONTRACTOR Deliverables section of Bid Item 8.

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Dye testing shall be commenced within one (1) week of permit approval. The completion date shall be determined by the DISTRICT, based on the number of dye tests to be performed. CONTRACTOR shall provide documentation of the results of the dye tests within four (4) weeks after testing is completed.

BID ITEM 12. MANHOLE VIDEO INSPECTION

SCOPE/REQUIREMENTS

CONTRACTOR shall provide on-call manhole video inspection services to visually inspect manholes. These inspections will be top-side only (i.e. no confined space entry required). Manhole video inspections will be performed for a wide range of reasons including, but not limited to confirming pipe connections within the manhole, observing a specific pipe connection for flow during a storm, and observing manhole condition during a storm. The camera operator shall start the inspection by panning around the manhole showing nearby landmarks or street signs in order for the reviewer to verify manhole location. The operator shall also record audio with information and observation of the inspection.

All pictures and recordings shall be in color, in focus, and properly illuminated with good contrast, adequate and evenly spread around the manhole perimeter without loss of contrast to clearly document the condition of the manhole.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONTRACTOR with the Notice to Proceed for each project:

a. Inspection Log

An Excel document listing all manholes to be inspected, including manhole ID, reason for the inspection, as well as any blank fields the CONTRACTOR is expected to fill out as part of the deliverable.

b. Overview Map

PDF map(s) showing all the manholes to be inspected.

CONTRACTOR DELIVERABLES

Specific CONTRACTOR deliverables for this Bid Item are listed below:

a. Inspection Log

The completed Excel inspection log shall include a list of ALL manholes issued to be inspected. The log shall include manhole ID, date of inspection, nearest address, any general comments on inspection, and an explanation if an inspection could not be attempted.

- File Name: MHVideo_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: MHVideo_InspectionLog_NTP0022_OAK_20160707

b. Video of Manhole

Video of each inspected manhole. Audio should also be included to indicate which site is being tested in the video, nearest address or cross-streets, and any observations for the manhole. Video should also pan out to show nearby landmark or street sign for site verification.

- File/Folder Name: [Asset_ID]
- Example: SES7748

SCHEDULE

Manhole video inspections shall be commenced on the day the DISTRICT specifies; the DISTRICT provides up to two (2) days' notice for when the investigation shall take place, as determined by the weather forecast. All CONTRACTOR deliverables shall be submitted to the DISTRICT within two (2) weeks after inspection is completed.

BID ITEM DESCRIPTIONS - PROFESSIONAL SERVICES

Professional services bid items, their scope, and their respective deliverables include:

BID ITEM 13. POINT PRECIPITATION MONITORING

SCOPE/REQUIREMENTS

CONSULTANT shall install rain gauges at locations identified by the DISTRICT throughout the regional wastewater service area during the each rainy season. The length of the monitoring period will vary, but will typically span from November 1st through April 15th for each rainy season. The gauges shall record precipitation with an accuracy of 0.01 inch. The DISTRICT plans on installing 17 to 25 rain gauges per rainy season.

Task 13.1 - EQUIPMENT INSTALLATION, REMOVAL AND SITE DOCUMENTATION

CONSULTANT shall install the equipment at the identified locations. Each gauge shall be installed in such a manner as to accurately measure rainfall. The CONSULTANT shall select the type of instrumentation and equipment that is best suited for accurately measuring rainfall. CONSULTANT shall provide documentation of installation by providing an installation site sheet for each rain gauge location. These site sheets should serve as documentation on where the equipment was installed, while also detailing any limitations to the viability of data.

TASK 13.1 DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

a. Inspection Log

An Excel document listing all rain gauges, including rain gauge ID, nearest address for installation, approximate installation GPS coordinates, site access information, as well as any blank fields the CONSULTANT is expected to fill out as part of the deliverable.

b. Overview Map

PDF overview map(s) showing all the locations where rain gauges will be installed.

TASK 13.1 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Inspection Log

The completed Excel inspection log listing all rain gauge installation information. Log shall include rain gauge ID, nearest address for installation, installation GPS coordinates, site access information, installation and removal dates, field notes of rain gauge installation, and general notes/observations.

- File Name: RainGauge_InspectionLog_NTPxxxx_[date submitted YYYYMMDD]
- Example: RainGauge_InspectionLog_NTP0050_20181215

a. Site Sheets

A site sheet for each rain gauge shall include: overview map of site location, photo of the area showing the installed rain gauge, GPS coordinates of the rain gauge, nearest address, installation date, equipment information, and general comments on location and installation.

- File: [Rain Gauge ID, defined by the DISTRICT]
- Example: RG04.1819

TASK 13.1 SCHEDULE

Site review shall be conducted within two (2) weeks of the Notice to Proceed; rain gauges shall be installed within one (1) week of acceptance of site. Site sheets shall be submitted within one (1) week of equipment installation. Rain gauges shall be removed within two (2) weeks after notice from the DISTRICT.

Task 13.2 - MONITORING & MAINTENANCE

Precipitation monitoring will be conducted for an extended period for all storm events throughout the rainy season. Each gauge shall provide sufficient data storage capabilities to ensure that data is recorded at five-minute intervals. Data shall be collected wirelessly via telemetry and shall be uploaded at least hourly to an online platform for DISTRICT use. Collected data shall be reviewed weekly for integrity and data quality to determine if any equipment recalibration is required.

Data integrity checks are to be performed by CONSULTANT weekly. Data integrity checks will, at a minimum, verify:

- The rain gauge is functioning;
- A signal from the rain gauge is being recorded (i.e. telemetry is functioning properly); and
- The rain gauge has adequate battery life for the next month of service.

If a rain gauge fails any of the data integrity checks, the CONSULTANT shall service, maintain, or replace the gauge.

Furthermore, CONSULTANT shall perform a weekly review of raw time-series rain data for data quality. The data quality checks will verify the consistency of reported rainfall values on an ongoing basis, as evidence that the rain gauge is functioning properly. At a minimum, the data quality checks will include:

- Rainfall event de-accumulation: a check for negative values in the rainfall time-series data, usually caused by the reset of the rain gauge at the end of each day;
- Evaluation for missing rainfall events: a check for blank or null values in the rainfall time-series data;
- Check for erroneous values: a check for values greater than 0.1-inches in the rainfall time-series data that were recorded during a period when a storm was not occurring; and
- Check for outlier values: review the minimum and maximum recorded values recorded in the rainfall time-series data. Values that are outside of the expected range shall be flagged and further evaluated in the validation check.

Lastly, CONSULTANT shall perform monthly data validation checks. If data collected at any rain gauge fails a validation check, the rain gauge shall receive calibration and maintenance service within 48 hours. The validation checks will, at a minimum, include:

- Rainfall data temporal comparison: rainfall time-series data will be compared to rainfall data from other rain gauges in the network to evaluate for consistency and reasonableness for periods of recorded rainfall;
- Rainfall storm accumulation comparison: rainfall depth accumulation curves will be created for each storm event and for each month of rainfall data. The storm accumulation curves will be compared and visually evaluated for reasonableness across all rain gauges; and
- ~~Rainfall comparison with weather radar: where either the rainfall data temporal comparison or rainfall storm accumulation comparison shows one or more rain gauges that record data where other rain gauges to not, a comparison to weather radar reflectivity data shall be performed to assess for presence of significant spatial and temporal variability in the storm as a validation of the recorded rainfall data.~~

If needed (based on weekly data review) or if telemetry is not available for a gauge, that gauge shall be visited at least once per week for calibration, data retrieval and review, and maintenance. If telemetry is utilized for data collection and it is determined during the weekly data review that site visits are not needed, then a routine physical site visit should at least be performed monthly. Routine monthly maintenance should include cleaning the accumulated dirt and debris from funnel and buckets, as well as ensuring that the gauge is level. If weekly review of the data indicates anomalous behavior, the gauge should be inspected and maintained prior to the next rainfall event. Recommendations also include annually replacing the tipping mechanism with a newly-calibrated unit and checking timing intervals and dates of records.

Rain gauges shall be down no longer than 48 hours after each visit or weekly data retrieval/review, with a total uptime per gauge required being greater than 90% for the monitoring period. At the end of the monitoring period, equipment uptimes (per rain gauge) should be determined for both the entire monitoring period and for only the wet weather periods. Wet weather periods will include any time frame during a storm event which contributes at least 0.30-inches of precipitation within a rolling twenty-four (24) hour period. Storm events will include the twenty-four (24) hours immediately following these qualifying wet weather periods. If an outage longer than two hours occurs during a storm event, then the percent uptime for that storm shall be determined to be zero, since the data would no longer be sufficient to characterize the storm response in the collection system. Adjustments may be made to the final full monitoring month's invoice based on observed uptimes.

TASK 13.2 DISTRICT DELIVERABLES

none

TASK 13.2 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Monthly Finalized Rain Data

Reviewed and finalized rain data at 5-minute intervals shall be submitted monthly for each rain gauge.

- File: [rain gauge name]_FinalData_mm.Mmm_[date submitted YYYYMMDD]
- Example: RG04.1819_FinalData_01.Jan_20191101

b. Data Hosting

Raw rain data shall be uploaded at least hourly to a data hosting site that will be accessible by DISTRICT staff. Uploaded data shall be exportable by the DISTRICT. At least four (4) user accounts shall be provided for DISTRICT use. Hosting shall be provided for the entire fiscal year in which the CONSULTANT provides point precipitation monitoring.

TASK 13.2 SCHEDULE

Monthly finalized rain data for each gauge shall be submitted electronically by the 15th of the following month (e.g. January rain data shall be submitted by February 15th). Raw rain data shall be uploaded at least hourly to a data hosting site that will be accessible by DISTRICT staff.

Task 13.3 - FINAL REPORTING

At the end of the monitoring period, CONSULTANT shall prepare all final rain data and a final report for the DISTRICT.

TASK 13.3 DISTRICT DELIVERABLES

none

TASK 13.3 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Final Rain Data

Final rain data shall be submitted for each rain gauge at 5-minute intervals for the entire monitoring period.

- File Name: [gauge name]_FinalData_[date submitted YYYYMMDD]
- Example: RG04.1819_FinalData_NTP0082_20191101

b. Final Report

The final report should include specific details for each installed rain gauge. Final report shall include the following for each rain gauge: a copy of the final site sheets, monitoring period, equipment outages and reasons for the outages, percent uptime (total and wet weather), and hydrograph chart for monitoring period.

- File Name: RainGauge_FinalReport_NTPxxxx_[date submitted YYYYMMDD]
- Example: RainGauge_FinalReport_NTP0050_20181215

TASK 13.3 SCHEDULE

Final report and final rain data shall be submitted to the DISTRICT within four (4) weeks after equipment is removed.

BID ITEM 14. FLOW MONITORING

SCOPE/REQUIREMENTS

CONSULTANT shall install flow meters at specified locations determined by the DISTRICT throughout the regional wastewater collection system. Flow meters shall be capable of measuring depth, velocity, pressure, temperature, and battery charge percentage. Raw data shall be collected wirelessly via telemetry and uploaded at least daily to an online platform for DISTRICT use. The CONSULTANT shall select the type of instrumentation and equipment that is best suited for accurately measuring the specified flow parameters—given the hydraulic conditions present at the site and the intended use of the data (i.e. using a meter with a gated velocity sensor at sites where an irregular velocity profile is likely to exist, etc.). CONSULTANT shall perform all necessary site inspection, installation, calibration, maintenance, data quality review, and removal of the meters. The length of flow monitoring periods will vary for each investigation project, but will typically span the rainy season from November 1st through March 31st. In the first two years of this contract, the DISTRICT anticipates installing between 100 and 300 flow meters per rainy season.

Task 14.1 - SITE RECONNAISSANCE AND FINAL SITE SELECTION

CONSULTANT shall perform preliminary reconnaissance at each proposed site prior to the installation of the meters in order to determine hydraulic suitability and monitoring effectiveness. CONSULTANT shall install meters at the locations identified by the DISTRICT and provide detailed inspection results for each location. If needed, CONSULTANT shall consult with the DISTRICT to discuss alternative locations and/or equipment

suitable for the investigation. Documentation for all installations, including any modifications to a preliminary location and supporting information will be made in the 'Investigation Notes' column of the Inspection Log (template provided by the DISTRICT). The DISTRICT will respond to the site location change requests in the Inspection Log as well. Proper documentation explaining the reason the proposed meter site is not suitable will be required, including photograph(s) supporting the decision. The DISTRICT shall approve all proposed site location changes prior to installation.

TASK 14.1 DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all meters to be installed, including meter ID, manhole ID, assumed pipe diameter, site notes, as well as any fields the CONSULTANT is expected to fill out as part of the deliverable.
- b. Overview Map**
An overview PDF map showing locations of all manholes to install flow meters.
- c. Detailed Map**
Detailed PDF maps showing a close up of each meter installation site.
- d. Sewer Manhole GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile or KLM file of all meter locations and manholes in adjacent area.
- e. Sewer Mains GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile or KLM file of all adjacent sewer mains to the manholes where meters will be installed.

TASK 14.1 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

- a. Inspection Log**
The filled-in Excel inspection log with a list of ALL meters issued to be installed. The log shall include meter ID, originally issued and final manhole ID, assumed and actual diameter of pipe, field notes of site recon (including why sites need to be moved).
 - File Name: Flow_InspectionLog_NTPxxxx_[Satellite abbr.]
 - Example: Flow_InspectionLog_NTP0050_OAK

TASK 14.1 SCHEDULE

Site reconnaissance shall begin within one (1) week of the Notice to Proceed and application for necessary permits shall be submitted to applicable agencies within one (1) week of final acceptance of sites. Initial Inspection Log comments shall be submitted once all sites have been investigated for the given Notice to Proceed. Subsequent Inspection Log submissions with details on sites that require follow-up site reconnaissance information will be submitted on a rolling basis, on a schedule as determined by the DISTRICT. Sites will not be considered finalized until the DISTRICT has received a completed Inspection Log with site reconnaissance feedback for all meters.

Task 14.2 - EQUIPMENT INSTALLATION, REMOVAL AND SITE DOCUMENTATION

Following receipt of all necessary permits, CONSULTANT shall install the equipment at the identified locations within the project area. Each meter shall be installed in such a manner as to accurately measure specific changes to water levels and velocities from the normal operating range. CONSULTANT shall provide documentation of installation by providing an installation site sheet for each flow meter location. The site sheets shall serve to provide certainty to the DISTRICT that the equipment was installed in the proper locations, while also detailing any limitations to the viability of data. Following completion of the monitoring period, CONSULTANT shall remove all equipment and return the manhole to the condition it was in prior to the installation.

TASK 14.2 DISTRICT DELIVERABLES

The DISTRICT will provide the following information to the CONSULTANT:

a. Upstream Meter Table

An Excel table indicating which flow meters are upstream of each other for flow mass balancing purposes. This table will be provided approximately two (2) weeks after Site Sheets have been submitted and approved by DISTRICT staff, and should be used by the CONSULTANT during data quality checks before finalizing data.

TASK 14.2 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Inspection Log

The completed Excel inspection log with meter installation and removal dates, site setup information, and general installation notes, in addition to all previously completed fields.

- File Name: Flow_InspectionLog_NTPxxxx_[Satellite abbr.]
- Example: Flow_InspectionLog_NTP0050_OAK

b. Site Sheets

A site sheet for each meter installation shall include: overview map of site location (at the appropriate scale to provide clear documentation regarding which assets flow meters were installed in); top-side photo of the area (site manhole lid removed and nearby landmarks or street signs visible for site verification); a photo of the inside the manhole; a photo of the meter installed; GPS coordinates of the manhole; a sketch or rendering of the orientation of the inlets and outlets present in the manhole with an indication of which pipe is being monitored (a note should be included if the number or flow direction of inlets and outlets observed in the manhole do not match the GIS maps provided); equipment information; communication/telemetry information; all pertinent site information (nearest address, meter ID, traffic condition, manhole asset ID, manhole material, manhole diameter, manhole depth, pipe material); installation dates; and general comments on location and installation. Note: The photographs shall be taken with sufficient effort and appropriate lighting to document the condition of the manhole. North arrows shall be included on all photos included in the site sheets.

- File: [Meter ID, defined by the DISTRICT]
- Example: SSD_0078_046

TASK 14.2 SCHEDULE

For typical rainy season flow monitoring, flow meters shall be installed by November 1st each year and removed beginning April 1st each year unless otherwise instructed by the DISTRICT. Site Sheets shall be submitted within two (2) weeks after the monitoring period start date. Flow meters shall be removed within four (4) weeks after the end of the monitoring period, as determined by the DISTRICT. Updated Inspection Log shall be submitted within five (5) weeks after the end of the monitoring period.

Task 14.3 - MONITORING & MAINTENANCE

Flow monitoring will be conducted for an extended period including multiple storm events throughout the rainy season. Each meter shall be calibrated, at minimum, during installation, mid-season (middle to end of January), and during demobilization. Each flow meter shall provide data storage capabilities to store data at five-minute intervals.

Raw data shall be collected wirelessly via telemetry and shall be uploaded at least daily to an online platform for DISTRICT use. Collected data shall be reviewed weekly to determine if any equipment recalibration is required. If needed (based on weekly data review) or if telemetry is not available for a meter, that meter shall be visited at least twice per week for the first two weeks and once per week thereafter for calibration, data retrieval and review, and maintenance. If telemetry is utilized for data collection and it is determined

during the weekly data review that site visits are not needed, then a routine physical site visit should be performed at least once approximately halfway through the monitoring period (middle to end of January).

Meters shall be down no longer than 48 hours after each visit or weekly data retrieval/review, with a total per meter uptime to be greater than 90% for the monitoring period. At the end of the monitoring period, equipment uptimes should be determined per meter for both the entire monitoring period and for only the wet weather periods. Wet weather periods will include any time frame during a storm event which contributes at least 0.30-inches of precipitation within a rolling twenty-four (24) hour period. Storm events will include the twenty-four (24) hours immediately following these qualifying wet weather periods. If an outage longer than two hours occurs during a storm period, then the percent uptime for that storm shall be determined to be zero, since the data would no longer be sufficient to characterize that specific storm's response within the local meter shed. Total precipitation depth per storm event will be determined with the DISTRICT-provided rain data based on the average hourly rainfall for all gauges. If a rain gauge is not recording, NULL values should not be included in calculation (i.e. shall not count as zero rain for that time step). Adjustments may be made to the final full months monitoring invoice based on observed uptimes.

Weekly data review shall include, but should not be limited to, the following items:

- Examination of depth versus velocity scatter graph to assess appropriate means for calculating flows based on the available data (i.e. evidence of: 'dead dog', reverse flow, hydraulic jump, nearby pump station, etc.);
- Examination for velocity drift;
- Examination of variances in water levels;
- Comparison of the current week's hydrographs from those recorded earlier at the same location to identify unexpected flow pattern changes;
- Check for sufficient remaining battery life; and
- Check for diminishing telemetry connection that needs to be addressed.

Finalized flow data shall be provided monthly. Logs shall be submitted as part of the monthly finalized data submittal listing all site visits made for each meter location and explanations of observed data quality issues. Changes in the relative flow of downstream meters should be compared to meters immediately upstream before data is finalized (i.e. examined to see if meter drift is causing an upstream meter to show greater flows than the meter immediately downstream, etc.). DISTRICT may have finalized data verified by an independent third party for data quality check. If issues are discovered, CONSULTANT may need to take corrective actions.

TASK 14.3 DISTRICT DELIVERABLES

The DISTRICT will provide the following information to the CONSULTANT:

a. Monthly Precipitation Data

Excel tables of finalized precipitation data for each rain gauge that the DISTRICT has in our wastewater service area (approximately 17 - 25 gauges). This data should be used by the CONSULTANT to calculate wet weather uptime.

b. Monthly Finalized Flow Data Template

Excel workbook containing required final time series data template.

c. Site Visit Log Template

Excel workbook containing required Site Visit Log template.

d. Data Quality Notes Log Template

Excel workbook containing required Data Quality Notes Log template

TASK 14.3 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Monthly Finalized Flow Data

Reviewed final monthly flow data shall be submitted for each meter at 5-minute intervals. This shall also include metered depth, velocity, pressure, temperature, and battery data, plus the determined flow through the meter. During meter outages, data shall be blank (versus omitting dates from data or filling in 0).

- File: [meter name]_FinalData_mm.Mmm [two digit and first three letters of monitoring month]_[date submitted YYYYMMDD]
- Example: SSD_0078_046_FinalData_01.Jan_20171101

b. Site Visit Log

A log of all site visits shall be submitted including what, if any, activities were performed (such as maintenance of equipment, swapping out of battery, etc.), why the visit was scheduled, and the date of each visit. The log shall be appended and updated each month (e.g. the log submitted with the second final monthly data submittal will include information from both the first and second monitoring months).

- File: Flow_SiteVisitLog_NTPxxxx_[date submitted YYYYMMDD]
- Example: Flow_SiteVisitLog_NTP0078_20171101

c. Data Quality Notes Log

A log explaining what data quality issues were observed, the dates the issues took place, what corrective action was taken if needed, why any unusual data was assumed to be valid if a recalibration site visit was not made after weekly data review, and an indication of if the data is still usable during the issue period. Issues shall include, but not be limited to data gaps (meter outages lasting over 2 hours), mass balancing issues (upstream meter flows exceeding flows observed at meter immediately downstream), and data shifts and unexpected data trends. The log shall be appended and updated each month (e.g. the log submitted with the second final monthly data submittal will include information from both the first and second monitoring months).

- File: Flow_DataQualityNotesLog_NTPxxxx_[date submitted YYYYMMDD]
- Example: Flow_DataQualityNotesLog_NTP0078_20171101

d. Data Hosting

Raw flow data shall be uploaded at least daily to a data hosting site that will be accessible by DISTRICT staff. Uploaded data shall be exportable by the DISTRICT. At least four (4) user accounts shall be provided for DISTRICT use. Hosting shall be provided for the entire fiscal year in which the CONSULTANT provides flow monitoring.

TASK 14.3 SCHEDULE

Monthly finalized data, Site Visit Log, and Data Quality Notes Log shall be submitted to the DISTRICT by the last day of the month following the monitoring period (i.e. December finalized monthly submittals shall be provided by January 31st).

Task 14.4 - FINAL REPORTING

At the end of the monitoring period, CONSULTANT shall prepare all final flow data and a final report for the DISTRICT.

TASK 14.4 DISTRICT DELIVERABLES

none

TASK 14.4 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Final Flow Data

Monthly finalized flow data deliverables shall be combined into one Excel database per meter site.

- File/Folder Name: [meter name]_FinalData_[date submitted YYYYMMDD]
- Example: SSD_0078_046_FinalData_20171101

b. Final Report

The final report should include specific details for each installed flow meter. Final report shall include the following for each flow meter: general site overview and observations; average, minimum, and maximum depth (in), velocity (ft/s), and flow (MGD); monitoring period, list of equipment outages (including reasons for outage) and percent uptime (total and wet weather uptime); a copy of the final site sheets; discussion of unusual data pattern findings and a description of why these findings were assumed to have occurred; hydrograph charts for monitoring period (depth and velocity, flow and rain); and a depth-velocity scatter graph with rain bar graph. Final report shall also include reasoning for selecting the type of instrumentation and equipment for each site (or for overall project if all instrumentation and equipment is the same for the entire project).

- File Name: Flow_FinalReport_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: Flow_FinalReport_NTP0050_OAK_20181215

TASK 14.4 SCHEDULE

Final data shall be submitted within four (4) weeks of the removal of the meter. Final report shall be submitted within six (6) weeks after meter removal.

Task 14.5 - MEETINGS

The CONSULTANT shall meet with the DISTRICT annually mid-season, following the mid-season calibration check, to review interim flow monitoring results, current status, meter uptime, issues encountered during installation or monitoring, and any corrective action needed. The meeting will be up to four (4) hours in length. The meeting may be held either in the DISTRICT's offices (375 Eleventh Street, Oakland, CA 94607) or remotely, such as through video-conferencing or screen share.

TASK 14.5 DISTRICT DELIVERABLES

none

TASK 14.5 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Presentation Slides

Final presentation slides presented at the meeting.

Task 14.6 - I&I ANALYSIS SOFTWARE

CONSULTANT shall provide software that the DISTRICT can use independently to process finalized flow and rain data to calculate the I&I present during each storm event and during a user-defined prescribed storm event for each metered sub-basin.

The following data shall be able to be uploaded into the software:

- Flow data (Excel);
- Upstream meter table (Excel or equivalent)-shall be able to apply upstream flow percentage weightings and accept negative weightings if necessary (i.e. If a high point is monitored and flow flows away from the downstream metered basin during a storm event, then that flow should be able to be attributed to the downstream metered basin by using a negative upstream weighting or other means);

- Precipitation data (Excel);
- Gauge Adjusted Radar Rainfall (GARR) data (Excel);
- Meter to rain gauge distance table (Excel or equivalent); and
- Metered sub-basin area and pipe length table (Excel or equivalent).

Software should be able to:

- Automatically distinguish between NULL data (i.e. data outages) and zero flow/other flow patterns;
- Automatically distinguish between NULL data and zero rain/other rain patterns;
- Export all graphs;
- Export all calculated values in a editable format (Excel or equivalent);
- Combine meter sites (i.e. a metered sub-basin has more than one outlet so multiple meter flows must be added to get the flow of the sub-basin); and
- Modify general data processing settings without necessitating that all meter processing be repeated or restarted (i.e. if the dry day statistical average range settings are changed or the base infiltration settings are modified, then the storm events that are excluded from analysis for each meter would not need to be re-set, etc.).

STORM EVENT CHARACTERIZATION

The I&I analysis software shall be able to select storm events from precipitation data as a basis to determine I&I storm response. These events should be able to be calculated using user-defined storm event settings (i.e. over 0.5 inches within 12 hours, 1.0 inch within 36 hours, etc.). The user shall also be able to modify the individual storm event time ranges and recovery period lengths if desired. The storms that are chosen shall be able to be automatically applied for all meters in the study without requiring the user to re-enter the events repetitively for each meter. The final storm date time ranges, rain depth, and peak rainfall intensity for each gauge shall be exportable in an editable format as a single batch export.

For each meter, rainfall during the selected storm events should be calculated using the distance to the closest rain gauges and alternatively using the assigned GARR data for the site. If there is a rain gauge outage contained in a rain gauge's data, the software should be able to automatically recognize the outage and omit the data from that gauge when calculating rainfall during applicable storm events. The calculated rainfall for each meter storm event shall be exportable in an editable format as a single batch export.

All storm characterization shall be available in both storm intensity (in/hr) and depth (in).

DRY DAY FLOW CHARACTERIZATION

The I&I analysis software should calculate average diurnal dry day flow patterns for each meter. Holidays must be able to be omitted from the dry day calculations. The software must contain the ability for the user to omit days from the dry day calculations if the flow patterns are outside the statistical average dry day flow range for that meter or if desired for another reason. The software should generate hydrographs of the calculated average diurnal dry day patterns, with the option to include the observed individual dry day traces as well. The calculated average diurnal flow pattern data shall be exportable in an editable format as a single batch export by parameter (i.e. the calculated net dry day diurnal time series should be able to be exported for all meters at once in a single batch export, etc.).

All dry day flow characterization shall be available:

- For both weekend and weekday groups; and
- In both gross and net values (i.e. Software shall have the ability to factor in upstream meters to produce the net flow for each metered sub-basin).

I&I PROCESSING

The I&I analysis software should compare flows observed during the appropriate meter diurnal dry day to the flows observed during each storm event to calculate the desired I&I characteristics listed below for each

meter and storm event. The software shall also be able to estimate the amount of I&I that would be observed for a user-defined prescribed storm event based on the observed metered sub basin's I&I for the storm events that were monitored. These prescribed storm I&I estimates could be calculated using a best fit line or another scientifically defensible method.

Base infiltration values should be calculated based on user-defined settings and scientifically defensible methodology and factored into the I&I analysis. Base infiltration should be able to be assumed to be zero if desired by the user. Individual storm events should be able to be omitted from the I&I calculations for an individual meter if desired by the user. Additionally, the software should automatically omit storm events from the analysis if there is a meter data outage during part or all of the storm period. When processing a meter immediately downstream of an upstream meter with a data outage, the downstream meter should also automatically omit the storm event with the outage from the net calculations of the downstream meter. A meter outage should be determined by using a user-defined allowable percentage of data outage for the duration of each storm event (i.e. the user could modify settings so that if a meter was down for more than five percent of a storm event the storm event would be automatically omitted from I&I calculations).

To aid in the users determination of which storm events should be omitted from I&I analysis, the software should generate hydrographs for each meter storm event which overlays rain data, gross and net calculated I&I, and calculated base infiltration. The software should also have the ability to plot the following values with a best fit line for each meter (gross and net):

- I&I volumes for all events versus rainfall depth for all events;
- I&I volumes for all events versus rainfall peak intensity for all events;
- I&I peak flow rate for all events versus rainfall depth for all events; and
- I&I peak flow rates for all events versus rainfall peak intensity for all events.

The best fit line properties should also be provided (line equation, R-squared value, number of storm events included in calculation)

The calculated I&I characteristics and base flows shall be exportable in an editable format as a single batch export by parameter (i.e. the calculated net I&I volume per storm event should be able to be exported for all meters at once in a single batch export, etc.).

All I&I characterizations shall be available:

- In both total storm volume (MG) and peak flow rate (MGD);
- In both gross and net values (i.e. software shall have the ability to factor in upstream meters to produce the net I&I for each metered sub-basin); and
- For both the active storm period (period while actively raining) and the total storm event period (period while actively raining in addition to a user-defined recovery period after the storm).

GENERAL PROCESSING

The I&I analysis software shall be able to generate a full season flow hydrograph for each meter that overlays rain data and any programmed upstream meters (as entered in the imported upstream meter table). Software shall also be able to generate full season depth and velocity hydrographs for each meter. The user shall have the ability to zoom in to desired smaller portions of the full season hydrographs.

The software shall allow for batch processing, so that similar processing steps do not need to be repeated over and over again. Thus, general data processing settings shall be able to be applied as a starting point for all meters in the project. The settings for an individual meter site should be able to be changed from the base assumptions. These setting should include but not be limited to:

- Dry day statistical average range settings;
- Base infiltration calculation settings;
- Storm calculation settings;
- Storm recovery period;

- Allowable percent meter outage before meter data should be omitted for storm events; and
- Prescribed storm event settings.

TASK 14.6 SCHEDULE

If data must first be uploaded into the software by the CONSULTANT before the DISTRICT can begin data analysis, then data shall be available for processing within three (3) business days of when then data was provided to CONSULTANT.

BID ITEM 15. LEVEL MONITORING

SCOPE/REQUIREMENTS

CONSULTANT shall install level meters at specified locations determined by the DISTRICT throughout the regional wastewater collection system. Level meters shall be capable of measuring depth and battery charge percentage. Raw data shall be collected wirelessly via telemetry and uploaded at least daily to an online platform for DISTRICT use. The CONSULTANT shall select the type of instrumentation and equipment that is best suited for accurately measuring data. CONSULTANT shall perform all necessary site inspection, installation, calibration, maintenance, data quality review, and removal of the meters. The length of monitoring periods will vary for each investigation project, but will typically span the rainy season from November 1st through March 31st.

Task 15.1 - SITE RECONNAISSANCE AND FINAL SITE SELECTION

CONSULTANT shall perform preliminary reconnaissance at each proposed site prior to the installation of the meters in order to determine hydraulic suitability and monitoring effectiveness. CONSULTANT shall install meters at the locations identified by the DISTRICT and provide detailed inspection results for each location. If needed, CONSULTANT shall consult with the DISTRICT to discuss alternative locations and/or equipment suitable for the investigation. Documentation for all installations, including any modifications to a preliminary location and supporting information, will be made in the 'Investigation Notes' column of the Inspection Log (template provided by the DISTRICT). The DISTRICT will respond to the site location change requests in the Inspection Log as well. Proper documentation explaining the reason the proposed meter site is not suitable will be required, including photograph(s) supporting the decision. The DISTRICT shall approve all proposed site location changes prior to installation.

TASK 15.1 DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- Inspection Log**
An Excel document listing all meters to be installed, including meter ID, manhole ID, nearest address, site notes, as well as any fields the CONSULTANT is expected to fill out as part of the deliverable.
- Overview Map**
An overview PDF map showing locations of all manholes to install level meters.
- Detailed Map**
Detailed PDF maps showing a close up of each meter installation site.
- Sewer Manhole GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile or KLM file of all meter locations and manholes in adjacent area.
- Sewer Mains GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile or KLM file of all adjacent sewer mains to the manholes where meters will be installed.

TASK 15.1 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Inspection Log

The filled-in Excel inspection log with a list of ALL meters issued to be installed. The log shall include meter ID, originally issued and final manhole ID, field notes of site recon (including why sites need to be moved).

- File Name: Level_InspectionLog_NTPxxxx_[Satellite abbr.]
- Example: Level_InspectionLog_NTP0050_OAK

TASK 15.1 SCHEDULE

Site reconnaissance shall begin within one (1) week of the Notice to Proceed and application for necessary permits shall be submitted to applicable agencies within one (1) week of final acceptance of sites. Initial Inspection Log comments shall be submitted once all sites have been investigated for the given Notice to Proceed. Subsequent Inspection Log submissions with details on sites that require follow-up site reconnaissance information will be submitted on a rolling basis, on a schedule as determined by the DISTRICT. Sites will not be considered finalized until the DISTRICT has received a completed Inspection Log with site reconnaissance feedback for all meters.

Task 15.2 - EQUIPMENT INSTALLATION, REMOVAL AND SITE DOCUMENTATION

Following receipt of all necessary permits, CONSULTANT shall install the equipment at the identified locations within the project area. Each meter shall be installed in such a manner as to accurately measure specific changes to water levels from the normal operating range. CONSULTANT shall provide documentation of installation by providing an installation site sheet for each meter location. The site sheets shall serve to provide certainty to the DISTRICT that the equipment was installed in the proper locations, while also detailing any limitations to the viability of data. Following completion of the monitoring period, CONSULTANT shall remove all equipment and return the manhole to the condition it was in prior to the installation.

TASK 15.2 DISTRICT DELIVERABLES

none

TASK 15.2 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Inspection Log

The completed Excel inspection log with meter installation and removal dates, site setup information, and general installation notes, in addition to all previously completed fields.

- File Name: Level_InspectionLog_NTPxxxx_[Satellite abbr.]
- Example: Level_InspectionLog_NTP0050_OAK

b. Site Sheets

A site sheet for each meter installation shall include: overview map of site location (at the appropriate scale to provide clear documentation regarding which assets meters were installed in); top-side photo of the area (site manhole lid removed and nearby landmarks or street signs visible for site verification); a photo of the inside the manhole; a photo of the meter installed in the manhole; GPS coordinates of the manhole; a sketch or rendering of the orientation of the inlets and outlets present in the manhole (a note should be included if the number or flow direction of inlets and outlets observed in the manhole do not match the GIS maps provided); equipment information; communication/telemetry information; all pertinent site information (nearest address, meter ID, traffic condition, manhole asset ID, manhole material, manhole diameter, manhole depth); installation dates; and general comments on location and installation. Note: The photographs shall be taken with sufficient effort and appropriate lighting to document the condition of the manhole. North arrows shall be included on all photos included in the site sheets.

- File: [Meter ID, defined by the DISTRICT]
- Example: SSD_0078_046

TASK 15.2 SCHEDULE

For typical wet weather level monitoring, meters shall be installed by November 1st each year and removed beginning April 1st each year unless otherwise instructed by the DISTRICT. Site Sheets shall be submitted within two (2) weeks after the monitoring period start date. Meters shall be removed within four (4) weeks after the end of the monitoring period, as determined by the DISTRICT. Updated Inspection Log shall be submitted within five (5) weeks after the end of the monitoring period.

Task 15.3 - MONITORING & MAINTENANCE

Level monitoring will be conducted for an extended period including multiple storm events throughout the rainy season. Each meter shall be calibrated, at minimum, during installation, mid-season, and during demobilization. Each level meter shall provide data storage capabilities to store data at five-minute intervals.

Raw data shall be collected wirelessly via telemetry and shall be uploaded at least daily to an online platform for DISTRICT use. Collected data shall be reviewed weekly to determine if any equipment recalibration is required. If needed (based on weekly data review) or if telemetry is not available for a meter, that meter shall be visited at least twice per week for the first two weeks and once per week thereafter for calibration, data retrieval and review, and maintenance. If telemetry is utilized for data collection and it is determined during the weekly data review that site visits are not needed, then a routine physical site visit should be performed at least once approximately halfway through the monitoring period (end of December/early January).

Meters shall be down no longer than 48 hours after each visit or weekly data retrieval/review, with a total per meter uptime to be greater than 90% for the monitoring period. At the end of the monitoring period, equipment uptimes should be determined per meter for both the entire monitoring period and for only the wet weather periods. Wet weather periods will include any time frame during a storm event which contributes at least 0.30-inches of precipitation within a rolling twenty-four (24) hour period. Storm events will include the twenty-four (24) hours immediately following these qualifying wet weather periods. If an outage longer than two hours occurs during a storm period, then the percent uptime for that storm shall be determined to be zero, since the data would no longer be sufficient to characterize that specific storm's response within the local meter shed. Total precipitation depth per storm event will be determined with the DISTRICT-provided rain data based on the average hourly rainfall for all gauges. If a rain gauge is not recording, NULL values should not be included in calculation (i.e. shall not count as zero rain for that time step). Adjustments may be made to the final full months monitoring invoice based on observed uptimes.

Weekly data review shall include, but should not be limited to, the following items:

- Examination for data drift;
- Examination of variances of water levels;
- Comparison of the current week's hydrographs from those recorded earlier at the same location to identify unexpected level pattern changes;
- Check for sufficient remaining battery life; and
- Check for diminishing telemetry connection that needs to be addressed.

TASK 15.3 DISTRICT DELIVERABLES

none

TASK 15.3 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Data Hosting

Raw level data shall be uploaded at least daily to a data hosting site that will be accessible by DISTRICT staff. Uploaded data shall be exportable by the DISTRICT. At least four (4) user accounts shall be provided for DISTRICT use. Hosting shall be provided for the entire fiscal year in which the CONSULTANT provides level monitoring.

TASK 15.3 SCHEDULE

Raw data shall be collected wirelessly via telemetry and shall be uploaded at least daily to an online platform for DISTRICT use.

Task 15.4 - FINAL REPORTING

At the end of the monitoring period, CONSULTANT shall prepare all final level data and a final report for the DISTRICT. Finalized level data shall be provided at the end of the monitoring period. Additional data quality logs shall be submitted as part of the finalized data submittal listing all site visits made for each meter location and explanations of observed data quality issues. DISTRICT may have finalized data verified by an independent third party for data quality check. If issues are discovered, CONSULTANT may need to take corrective actions.

TASK 15.4 DISTRICT DELIVERABLES

a. Precipitation Data

Excel tables of finalized precipitation data for each rain gauge that the DISTRICT has in our wastewater service area (approximately 17-25 gauges). This data should be used by the CONSULTANT to calculate wet weather uptime.

b. Monthly Finalized Level Data Template

Excel workbook containing required final time series data template.

c. Site Visit Log Template

Excel workbook containing required Site Visit Log template.

d. Data Quality Notes Log Template

Excel workbook containing required Data Quality Notes Log template

TASK 15.4 CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item subtask are listed below:

a. Final Level Data

Reviewed final level data shall be submitted for each meter at 5-minute intervals. This shall also include metered depth and battery data. During meter outages, data shall be blank (versus omitting dates from data or filling in 0).

– File/Folder Name: [meter name]_FinalData_[date submitted YYYYMMDD]

– Example: SSD_0078_046_FinalData_20171101

b. Site Visit Log

A log of all site visits shall be submitted including what, if any, activities were performed (such as maintenance of equipment, swapping out of battery, etc.), why the visit was scheduled, and the date of each visit. The log shall be cumulative for the entire monitoring period.

– File: Level_SiteVisitLog_NTPxxx_[date submitted YYYYMMDD]

– Example: Level_SiteVisitLog_NTP0078_20171101

c. Data Quality Notes Log

A log explaining what data quality issues were observed, the dates the issues took place, what corrective action was taken if needed, why any unusual data was assumed to be valid if a recalibration site visit was not made after weekly data review, and an indication of if the data is still

usable during the issue period. Issues shall include, but not be limited to data gaps (meter outages lasting over 2 hours) and data shifts and unexpected data trends. The log shall be cumulative for the entire monitoring period.

- File: Level_DataQualityNotesLog_NTPxxxx_[date submitted YYYYMMDD]
- Example: Level_DataQualityNotesLog_NTP0078_20171101

d. Final Report

The final report should include specific details for each installed level meter. Final report shall include the following for each meter: general site overview and observations; average, minimum, and maximum depth (in); monitoring period; list of equipment outages (including reasons for outage) and percent uptime (total and wet weather uptime); a copy of the final site sheets; discussion of unusual data pattern findings and a description of why these findings were assumed to have occurred; and a depth-time scatter graph overlaid with rain data. Final report shall also include reasoning for selecting the type of instrumentation and equipment for each site (or for overall project if all instrumentation and equipment is the same for the entire project).

- File Name: Level_FinalReport_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: Level_FinalReport_NTP0050_OAK_20181215

TASK 15.4 SCHEDULE

Final data shall be submitted within four (4) weeks of the removal of the meter. Final report, Site Visits Log, and Data Quality Log shall be submitted within six (6) weeks after meter removal.

BID ITEM 16. FLOW ISOLATION INVESTIGATION

SCOPE/REQUIREMENTS

CONSULTANT shall provide flow isolation investigations services as requested by the DISTRICT to identify potential sources of I&I. Flow isolation investigations are used to find and document active I&I sources and identify the pipe reaches within a metered basin that are contributing high I&I. Flow isolation investigations takes place between the hours of 12:00 AM and 5:00 AM, and are typically conducted immediately following a large rainfall event or series of rainfall events when soil saturation levels are high. Since sanitary base flows are low between the late night and early morning hours, flow that is observed in the system during this investigation period can predominantly be attributed to I&I. Flow measurements shall be taken at multiple locations within the investigation area during a short period of time and a downstream flow meter shall be installed to record flows for the entire inspection area. Flows shall be mass balanced (upstream flows subtracted from downstream flows) to determine which portions of the basin are contributing the most I&I during the investigation period.

Each flow isolation investigation area is anticipated to be between 15,000 and 35,000 LF of sewer mains. The DISTRICT will provide CONSULTANT with flow isolation investigation project areas throughout the rainy season. However, investigations will not take place until weather forecast indicates a large storm event. The DISTRICT will provide CONSULTANT with up to two (2) days' notice for when the investigation shall occur. Preferred conditions for flow isolation studies include a storm event (over 1-inch within a 2-day period) ending just prior to the investigation period, and the ground being already saturated from previous storm events.

Task 18.1 - FIELD RECONNAISSANCE

CONSULTANT is required to evaluate a minimum of 20 manholes within each investigation area. CONSULTANT will determine which manholes are evaluated based on field observations; the CONSULTANT shall 'chase' upstream of locations which demonstrate a significant I&I response. At each evaluated manhole, spot velocity measurements and depths shall be recorded for each incoming line, thereby allowing the CONSULTANT to determine the flow rate from each incoming line (evaluated either by topside measurement or via confined space entry measurement). Furthermore, a topside photo documenting the physical and

hydraulic conditions of the inside of the manhole shall be taken at each evaluated manhole, even if no active I&I is present.

Additionally, confined space entry will be required at manholes when active sources of I&I are observed. During confined space entry, CONSULTANT shall take a video recording of the condition of the manhole, specifically where I&I is observed. All recordings shall have an audio descriptive narration by the field personnel. The audio shall clearly identify all important features: date, time, street names, structure numbers, pipe connections, pipe size, all defects, and size estimates of observed defects (in gpm and physical dimensions).

All pictures and recordings shall be in color, in focus, and properly illuminated with good contrast, adequate and evenly spread around the manhole perimeter without loss of contrast to clearly document the condition of the manhole.

CONSULTANT shall make note of any discrepancies between field conditions and GIS (e.g. manhole not located in the field, flow direction is inaccurate, pipe does connection does not exist, etc.) and include this information in the final report and final results map.

Task 18.2 - MONITORING

In addition to the spot measurements taken at each observed manhole, CONSULTANT shall install a flow meter at the most downstream manhole of each project area for the duration of the investigation. If The DISTRICT already has a nearby flow meter installed for the duration of the project, CONSULTANT does not have to install an additional flow meter; the DISTRICT will inform CONSULTANT at the beginning of each project if a flow meter is already installed. The DISTRICT will provide the CONSULTANT with access to the DISTRICT flow data.

Task 18.3 - DATA ANALYSIS & FINAL REPORTING

CONSULTANT shall analyze data from flow isolation investigation and compile results into a final report. The CONSULTANT shall use the flow meter data to create a correction factor for spot flow measurements taken during the study to account for changes in total basin flows observed during the investigation period (i.e. if it began to rain during a portion of the investigation period and basin flows were temporarily increased, then the correction factor would account for the increased overall flows for all spot measurements taken during that period). Correction factors should be equal to the maximum flow observed at the downstream flow meter during the flow isolation investigation period divided by the flow observed at the downstream meter at the time a spot measurement was taken (Q_{max}/Q). These correction factors shall be applied so that all spot measurements can be adequately compared to each other. Judgment calls to smooth the correction factor curve should be made if anomalous spikes appear in the downstream flow meter data during the investigation period. CONSULTANT shall also calculate a normalized flow rate (gallons per day per inch diameter mile) for I&I observed in pipe section groups between where flow measurements were taken. A heat map shall be created to indicate the pipe sections with the highest I&I rates. The normalized flow for each pipe section shall be classified with five class breaks utilizing a GIS legend provided by the DISTRICT. The map shall also indicate which manholes were evaluated (either topside or via confined space entry), whether I&I was observed in the manhole, the spot measurement locations and readings at each manhole, and if there are any discrepancies between field and GIS.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- a. Overview Map**
PDF map(s) showing all the project area to be studied.
- b. Sewer Main GIS Shapefile**
GIS shapefile of all sewer mains that are a part of the project area.

c. Sewer Manhole GIS Shapefile

GIS shapefile of all manholes that are a part of the project area.

d. Flow Isolation GIS legend

GIS legend for use by the CONSULTANT for visually displaying the determined results.

CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item are listed below:

a. Final Results Report

A final PDF report shall include introduction, description of investigation area, description of the rainfall event leading to the investigation, description and plot of correction factor calculations during the investigation period, what methods were used for the investigation, general observations on I&I in the area based on flow data and observations, how data was manipulated (e.g. normalized and correction factors), and specific results (e.g. which manholes and pipe connections had I&I including pictures and descriptions of defects with defect size estimates).

– File Name: FlowIsolation_FinalResultsReport_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: FlowIsolation_FinalResultsReport_NTP0083_OAK_20190329

b. Final Results Heat Map

A final PDF heat map depicting the results of the investigation on normalized I&I rates in the project area. The heat map shall include a legend with the normalized I&I color classes and GPD/IDM ranges, corrected spot flow measurement labels at each measured pipe connection in gallons per day (label symbol should indicate if flow measurement was taken topside or via confined space entry, symbols indicating which manholes were inspected and if active I&I was observed or not, symbol indicating where downstream flow meter was installed, and GIS correction notes.

– File Name: FlowIsolation_FinalResultsMap_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: FlowIsolation_FinalResultsMap_NTP0083_OAK_20190329

c. GIS Map Package (for ArcGIS Desktop) or Project File (for ArcGIS Pro)

A GIS Map Package or Project file shall be submitted with inspection results.

– File Name: FlowIsolation_FinalResultsGIS_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: FlowIsolation_FinalResultsGIS_NTP0083_OAK_20190329

d. Manhole Videos and Photos

Videos and photos shall be recorded for each manhole where active I&I is observed and at each evaluated manhole. Audio should also be included to indicate which manhole is being observed, nearest address or cross-streets, description of the manhole inlets and outlets, flow conditions, and the defects.

– File/Folder Name: [Asset_ID]

– Example: SEPi19020

e. Flow Meter Data

Reviewed final flow data shall be submitted for each meter at 5-minute intervals. This shall also include depth, velocity, pressure, and temperature. During meter outages, data shall be blank (versus omitting dates from data or filling in 0).

– File: [meter name]_FinalData_[date submitted YYYYMMDD]

– Example: SSD_0078_046_FinalData_20171101

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Flow isolation investigations shall be commenced on the day the DISTRICT specifies; the DISTRICT provides one (1) to two (2) days' notice for when the investigation shall be take place, as

determined by weather forecast. All CONSULTANT deliverables shall be submitted to the DISTRICT within four (4) weeks after inspection is completed.

BID ITEM 17. CONDUCTIVITY MONITORING

SCOPE/REQUIREMENTS

CONSULTANT shall provide conductivity monitoring services as requested by the DISTRICT to identify potential sources of I&I. Conductivity monitoring is used to identify pipe reaches and contributing basins in which brackish water has entered the sanitary sewer system, as the conductivity of brackish water is significantly elevated in comparison to the potable water delivered to a property which is returned as wastewater. Conductivity monitoring shall be performed at set time intervals in concert with flow monitoring, in order to assess any variability of the conductivity signature. The CONSULTANT shall select the type of instrumentation and equipment that is best suited for accurately measuring flow and conductivity in a sewer environment.

Task 16.1 - SITE RECONNAISSANCE & EQUIPMENT INSTALLATION

CONSULTANT shall perform preliminary reconnaissance at each proposed site prior to the installation of the equipment in order to determine suitability for data collection. CONSULTANT shall install flow and conductivity monitoring equipment at the locations identified by the DISTRICT and provide detailed inspection results for each location. If needed, CONSULTANT shall consult with the DISTRICT to discuss alternative locations and/or equipment suitable for the investigation. To ensure a paper trail is maintained for all installation decisions, all site location change requests will be made in the 'Investigation Notes' column of the Inspection Log (template provided by the DISTRICT). The DISTRICT will respond to the site move requests in the Inspection Log as well. Proper documentation explaining the reason the proposed meter site is not suitable will be required, including photograph(s) documenting the reason. The DISTRICT shall approve all proposed site location changes prior to installation.

Following receipt of all necessary permits, CONSULTANT shall install all equipment at the identified locations within the project area. CONSULTANT shall provide documentation of installation by providing a site sheet for each manhole the equipment was installed in as well as appropriate information related to the conductivity meter, including make, model and applicability for use in a sewer system environment. These site sheets should serve to provide certainty to the DISTRICT that the equipment was installed in the proper locations, while also detailing any limitations to the viability of data. Following completion of the monitoring period, CONSULTANT shall remove all equipment and return the manhole to the condition it was in prior to the installation.

Task 16.2 - MONITORING & MAINTENANCE

Equipment shall be installed for two (2) consecutive months during the dry season to capture conductivity throughout two (2) complete lunar phases. Conductivity and flow monitoring equipment shall collect data at 5-minute increments. The conductivity and flow monitoring equipment shall be calibrated, at minimum, during installation, mid-project, and during demobilization.

Collected flow and conductivity data shall be reviewed weekly to determine if any equipment recalibration is required. If needed or if telemetry is not available for a meter, that meter shall be visited at least twice per week for the first two weeks and once per week thereafter for calibration, data retrieval and review, and maintenance. If telemetry is utilized for data collection and it is determined during data review that site visits are not needed, then a routine physical site visit should at least be performed once approximately halfway through the end of the monitoring period. Meters shall be down no longer than 48 hours after each visit or data retrieval/review, with a total per meter up-time to be greater than 90%.

Weekly data review shall include but should not be limited to the following items:

- Examination of depth versus velocity scatter graph to assess appropriate means for calculating flows based on the available data (i.e. evidence of: ‘dead dog’, reverse flow, hydraulic jump, nearby pump station, etc.);
- Examination for velocity drift;
- Examination of variances of water levels;
- Comparison of the current weeks hydrograph with earlier hydrographs at the same location to look for unexpected flow pattern changes;
- Check for sufficient battery remaining battery life; and
- Check for diminishing telemetry connection that needs to be addressed.

Finalized flow data shall be provided monthly. Logs shall be submitted as part of the monthly finalized data submittal listing all site visits made for each meter location and explanations of observed data quality issues.

Task 16.3 - DATA ANALYSIS & FINAL REPORTING

Using flow meter data and conductivity readings, CONSULTANT shall quantify how much brackish water is infiltrating/introduced into the sanitary sewer system and plot the resulting brackish water intrusion hydrograph. To calculate the brackish flow rates the CONSULTANT shall determine and utilize the appropriate methodologies. An example for calculating brackish contribution follows:

$$k_{observed} * Q_{observed} = (k_{baseflow} * Q_{diurnal}) + (k_{brackish} * Q_{brackish})$$

- $k_{observed}$ – The observed conductivity. Measured by CONSULTANT in the field.
- $Q_{observed}$ – The observed total flow rate. Measured by CONSULTANT in the field.
- $k_{baseflow}$ – The expected wastewater base flow conductivity. Assumed to be 700 µmhos/cm unless otherwise stated by the DISTRICT.
- $Q_{diurnal}$ – The expected diurnal wastewater base flow rate during the time the flow conductivity sample was taken. Calculated by the CONSULTANT based on flow data provided by the DISTRICT.
- $k_{brackish}$ - The assumed brackish dry weather conductivity. This value is to be determined by the CONSULTANT. The CONSULTANT shall use the observed wastewater conductivity when the tide is high between the hours of 12am and 4am (i.e. when much of sanitary base flow is assumed to be attributed to infiltration) as a basis for calculation.
- $Q_{brackish}$ - The flow rate of brackish water intrusion. Calculated by the CONSULTANT.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- a. Inspection Log**
An Excel document listing all conductivity meters to be installed, including meter ID, manhole ID, assumed pipe diameter, site notes, as well as any fields the CONSULTANT is expected to fill out as part of the deliverable.
- b. Overview Map**
An overview PDF map showing locations of all manholes to install conductivity meter.
- c. Detailed Map**
Detailed PDF maps showing a close up of each conductivity meter installation site.
- d. Sewer Manhole GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile or KLM file of all conductivity meter locations and manholes in adjacent area.
- e. Sewer Mains GIS Shapefile or KLM file (if CONSULTANT requests)**
GIS shapefile of all adjacent sewer mains to the manholes where conductivity meters will be installed.

CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item are listed below:

a. Inspection Log

The filled-in Excel inspection log with a list of ALL conductivity meters issued to be installed. The log shall include conductivity meter ID, originally issued and final manhole ID, assumed and actual diameter of pipe, field notes of site recon (including why sites were not able to be installed), and installation dates.

- File Name: Conductivity_InspectionLog_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: Conductivity_InspectionLog_NTP0050_OAK_20190120

c. Site Sheets

A site sheet for each conductivity and flow meter installation shall be provided. Site sheets shall include: overview map of site location; top-side photo of the area (site manhole lid removed and nearby landmarks or street signs present for site verification); a photo of inside the manhole; photo of meter installed; GPS coordinates of the manhole; equipment information; all pertinent site information (nearest address, meter ID, traffic condition, manhole asset ID, manhole material, manhole diameter, manhole depth, pipe material); installation dates; and general comments on location and installation. Note: The photographs shall be taken with sufficient effort and appropriate lighting to document the condition of the manhole. North arrows shall be included on all photos included in the site sheets.

- File: [Meter ID, determined by the DISTRICT]
- Example: ALA_0202_046

e. Final Conductivity Data

Finalized conductivity data deliverables shall be submitted for each conductivity meter site at 5-minute intervals. This data shall include time of reading, temperature, salinity, conductivity, and corresponding tidal data.

- File/Folder Name: [Meter ID]_FinalData_[date submitted YYYYMMDD]
- Example: ALA_0202_046_FinalData_20210701

f. Brackish Water Intrusion Hydrograph

Finalized calculated brackish water intrusion time-series data and hydrograph for the entire monitoring period. This data shall include corresponding tidal data.

- File/Folder Name: [Meter ID]_BrackishIntrusionData_[date submitted YYYYMMDD]
- Example: ALA_0202_046_BrackishIntrusionData_20210701

g. Final Report

Final PDF report shall include the following for each meter: general site overview and observations; average, minimum, and maximum conductivity readings for each meter; monitoring period, list of equipment outages (including reasons for outage); a copy of the final site sheets; discussion of unusual data pattern findings and a description of why these findings were assumed to have occurred; charts for monitoring period (conductivity reading and tidal reading). Final report shall also include reasoning for selecting the type of instrumentation and equipment for each site (or for overall project if all instrumentation and equipment is the same for the entire project).

- File Name: Flow_FinalReport_NTPxxxx_[Satellite abbr.]_[date submitted YYYYMMDD]
- Example: Flow_FinalReport_NTP0050_OAK_20181215

SCHEDULE

Applications for necessary permits shall be submitted to all applicable agencies within two (2) weeks of the Notice to Proceed. Conductivity studies shall be commenced within one (1) week of permit approval. All CONSULTANT deliverables shall be submitted to the DISTRICT within four (4) weeks after monitoring period is completed.

BID ITEM 18. CONDUCTIVITY ISOLATION INVESTIGATION

SCOPE/REQUIREMENTS

CONSULTANT shall provide conductivity flow isolation investigations services as requested by the DISTRICT to identify sources of brackish water entering the sanitary sewer system, as the conductivity of brackish water is significantly elevated in comparison to the potable water delivered to a property which is returned as wastewater. Conductivity isolation investigations are used to find and identify the pipe reaches with high brackish water intrusion within a basin where broader scale conductivity testing has already been performed. Conductivity isolation investigations will be scheduled to occur during the period of highest conductivity flow rates and/or readings previously identified. Both flow and conductivity spot measurements shall be taken at multiple locations within the investigation area during a short period of time (about 2 hours of active investigation) while a downstream flow meter, installed and maintained by the CONSULTANT, records flows for the entire inspection area. The recorded values for flow and conductivity shall be mass balanced (upstream quantities isolated from downstream quantities) and the quantities of brackish water intrusion entering the sanitary system shall be determine, thereby identifying portions of the basin which are contributing the most brackish water during the investigation period. The CONSULTANT shall select the type of instrumentation and equipment that is best suited for accurately measuring flow and conductivity in a sewer environment.

Conductivity isolation shall not be performed during the rain or when the ground is saturated with rainwater. CONSULTANT shall wait a minimum of 10 days after a rain event to conduct conductivity isolation testing.

Task 17.1 - FIELD RECONNAISSANCE

Each conductivity isolation investigation area is anticipated to include less than 5,000 LF of sewer mains. CONSULTANT is required to evaluate a minimum of 10 manholes within each investigation area. CONSULTANT will determine which manholes are evaluated based on field observations; the CONSULTANT shall 'chase' upstream of locations which demonstrate a significant conductivity response. At each evaluated manhole, localized velocity, depth, conductivity and temperature readings, shall be recorded for each incoming line, thereby allowing the CONSULTANT to determine the flow rate and volume of brackish water entering from each incoming line (evaluated by topside measurement). Furthermore, a topside photo documenting the physical and hydraulic conditions of the inside of the manhole shall be taken at each evaluated manhole.

Confined space entry for documenting active sources of brackish water intrusion is not anticipated. However, if required and authorized by a scope clarification by the DISTRICT, confined space entry may be performed. During confined space entry, CONSULTANT would take a video recording of the condition of the manhole, specifically where non-wastewater water intrusion is observed. Efforts shall be made by the CONSULTANT to determine if the non-waste source is brackish by performing a conductivity measurement. If identified as brackish, CONSULTANT shall estimate the flow of the identified source. All recordings would have an audio descriptive narration by the field personnel. The audio would clearly identify all important features: date, time, street names, structure numbers, pipe connections, pipe size, all defects, and size estimates of observed defects (in gpm and physical dimensions).

All pictures (and recordings if applicable) shall be in color, in focus, and properly illuminated with good contrast, adequate and evenly spread around the manhole perimeter without loss of contrast to clearly document the condition of the manhole.

CONSULTANT shall make note of any discrepancies between field conditions and GIS (e.g. manhole not located in the field, flow direction is inaccurate, pipe connection does not exist, etc.) and include this information in the final report and final results map.

Task 17.2 - MONITORING

In addition to the spot measurements taken at each observed manhole, the CONSULTANT shall install a downstream flow meter for the duration of the project. If the DISTRICT already has a nearby flow meter

installed for the duration of the project, CONSULTANT shall provide necessary information for the DISTRICT to provide a Scope Clarification for the removal of the CONSULTANT-provided flow meter from the investigation; the DISTRICT will inform CONSULTANT at the beginning of each project if a flow meter is already installed. The DISTRICT will provide the CONSULTANT with access to the DISTRICT flow data.

Task 17.3 - DATA ANALYSIS & FINAL REPORTING

CONSULTANT shall analyze data from the conductivity isolation investigation and compile results into a final report. CONSULTANT shall calculate a normalized flow rate (gallons per day per inch diameter mile) for brackish water intrusion entering the sanitary system in pipe section groups between where flow and conductivity measurements were taken. The CONSULTANT shall use downstream flow meter data that was collected during dry weather prior to the conductivity isolation study to create an average low tide diurnal dry day pattern at 5-minute time increments. The DISTRICT will provide this flow meter data. To calculate the brackish flow rates the CONSULTANT shall determine and utilize the appropriate methodologies. An example for calculating brackish contribution follows:

$$k_{observed} * Q_{observed} = (k_{baseflow} * Q_{diurnal}) + (k_{brackish} * Q_{brackish})$$

- $k_{observed}$ – The observed conductivity. Measured by CONSULTANT in the field.
- $Q_{observed}$ – The observed total flow rate. Measured by CONSULTANT in the field.
- $k_{baseflow}$ – The expected wastewater base flow conductivity. Assumed to be 700 μ mhos/cm unless otherwise stated by the DISTRICT.
- $Q_{diurnal}$ – The expected diurnal wastewater base flow rate during the time the flow conductivity sample was taken. Calculated by the CONSULTANT based on flow data provided by the DISTRICT.
- $k_{brackish}$ - The assumed brackish dry weather conductivity. This value is to be determined by the CONSULTANT. The DISTRICT will provide previous dry weather time series conductivity data at the downstream flow meter site to assist in this determination.
- $Q_{brackish}$ - The flow rate of brackish water intrusion. Calculated by the CONSULTANT.

The CONSULTANT shall use installed flow meter data and historical conductivity data to create correction factors for spot flow and conductivity measurements taken during the study to account for changes in total basin flows observed and for differences in brackish water conductivity during the investigation period. These correction factors shall be applied so that all spot measurements can be adequately compared to each other. Judgment calls to smooth the correction factor curve should be made if anomalous spikes appear in the downstream flow meter data during the investigation period.

A heat map shall be created to indicate the pipe sections with the highest brackish water intrusion rates. The normalized flow for each pipe section shall be classified with five (5) class breaks utilizing a GIS legend provided by the DISTRICT. The map shall also indicate which manholes were evaluated, whether brackish water intrusion was actively observed in the manhole, the spot measurement locations and corrected flow and conductivity readings at each manhole, and if there are any discrepancies between field and GIS.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- a. Prior Downstream Dry Day Flow and Conductivity Data**
Excel time-series flow and conductivity data in 5-minute time increments.
- b. Overview Map**
PDF map(s) showing all the project area to be studied.
- c. Sewer Main GIS Shapefile**
GIS shapefile showing all sewer mains that are a part of the project area.

d. Sewer Manhole GIS Shapefile

GIS shapefile of all manholes that are a part of the project area.

e. Flow Isolation GIS legend

GIS legend for use by the CONSULTANT for visually displaying the determined results.

CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item are listed below:

a. Final Results Report

A final PDF report shall include introduction, description of investigation area, description and plot of correction factor calculations during the investigation period, description of conductivity-flow volume mass balancing, what methods were used for the investigation, general observations on brackish flow intrusion in the area based on flow data and observations, how data was manipulated (e.g. normalized and correction factors), and specific results (e.g. which manholes and pipe connections had I&I including pictures and descriptions of defects with defect size estimates). Final report shall also include reasoning for selecting the type of instrumentation and equipment for each site (or for overall project if all instrumentation and equipment is the same for the entire project).

– File Name: ConductivityIsolation_FinalResultsReport_NTPxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: ConductivityIsolation_FinalResultsReport_NTP0083_OAK_20190329

b. Final Results Heat Map

A final PDF heat map depicting the results of the investigation and normalized brackish water intrusion rates in the project area. The heat map shall include a legend with the normalized intrusion color classes and GPD/IDM ranges, spot flow measurement (in gallons per day) and conductivity measurement labels at each measured pipe connection (label symbol should indicate which manholes were inspected and if active brackish water intrusion was observed or not), symbol indicating where downstream flow meter was installed, and GIS correction notes.

– File Name: ConductivityIsolation_FinalResultsMap_NTPxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: ConductivityIsolation_FinalResultsMap_NTP0083_OAK_20190329

c. GIS Map Package (for ArcGIS Desktop) or Project File (for ArcGIS Pro)

A GIS Map Package or Project file shall be submitted with inspection results.

– File Name: ConductivityIsolation_FinalResultsGIS_NTPxxx_[Satellite abbr.]_[date submitted YYYYMMDD]

– Example: ConductivityIsolation_FinalResultsGIS_NTP0083_OAK_20190329

d. Manhole Videos and Photos

Topside videos and photos shall be taken for each evaluated manhole. Audio should also be included on videos to indicate which manhole is being observed, nearest address or cross-streets, description of the manhole inlets and outlets, flow conditions, and the defects.

– File/Folder Name: [Asset_ID]

– Example: SEPi19020

e. Flow Meter Data

Reviewed final flow data shall be submitted at 5-minute intervals. This shall also include depth, velocity, pressure, and temperature. During meter outages, data shall be blank (versus omitting dates from data or filling in 0).

– File: [meter name]_FinalData_[date submitted YYYYMMDD]

– Example: SSD_0078_046_FinalData_20171101

BID ITEM 19. MACHINE LEARNING FOR MAINLINE INSPECTION VIDEO AND SCAN ANALYSIS

The objective of this Bid Item is to procure software tool(s) to assist in the review of sewer inspection videos and images. CONSULTANT shall use machine learning to process previously collected imagery and/or video of

sanitary sewer mains. The DISTRICT will provide the CONSULTANT with up to 300,000 linear feet of CCTV video inspections and/or digital imagery scans of sanitary sewer mains of various size and materials.

Task 19.1 - DOCUMENTATION

The CONSULTANT shall provide documentation of the artificial intelligence (AI) algorithm which describes the basis of sewer defect identification and expected performance metrics. At a minimum, the documentation shall include the following:

- a. Description of methodology to detect, identify and code different types of sewer defects, which shall include equivalency to NASSCO standards, and confidence threshold;
- b. Documentation of software testing completed including performance metrics, sewer data type and quantity as well as libraries used for machine learning;
- c. The source code, including appropriate comments for readability and programming language(s) used in development; and
- d. Compatibility with GIS tools and enterprise security protocols.

Task 19.2 - VISUAL DATA ANALYSIS & PROCESSING

The CONSULTANT shall develop and provide an algorithm to review CCTV video inspections and/or digital imagery scans provided by the DISTRICT and code the identified sewer defects. At a minimum, the algorithm and associated platform shall perform the following:

- a. Upload CCTV video inspections and screen for acceptability;
- b. Identify sewer taps at above than 95% accuracy;
- c. Allow validation and edits on AI-identified defects; and
- d. Compile tabulated results in a NASSCO compliant database or other specified format.

Task 19.3 - FINAL REPORT

The CONSULTANT shall submit a draft technical memorandum of the findings of the project. The CONSULTANT may use DISTRICT provided data to “train” the program. The technical memorandum shall include the following information:

- a. Effectiveness of computational algorithm in identifying sewer main defects in accordance with NASSCO standards;
- b. Comparison of the AI results to the previously collected PACP results;
- c. Project limitations, if any, regarding the ability to analyze the data;
- d. Data analytics efforts undertaken as part of the scope, including recommendations, if any, for improvement; and
- e. Recommendations for improvement of data collection and analytics.

The DISTRICT shall review and provide comments of a draft technical memorandum and other deliverables.

The CONSULTANT shall review and address the comments and submit of a final technical memorandum.

Task 19.4 - MEETINGS

The CONSULTANT shall meet with the DISTRICT to review the results of machine learning efforts and to discuss any additional benefits it may provide for the documentation of non-wastewater flows entering the wastewater collection system. The meeting will be up to four (4) hours in length. The meeting may be held either in the DISTRICT’s offices or remotely, such as through video-conferencing or screen share.

Task 19.5 - RAW DATA PROCESSING

Depending on the documentation provided by the CONSULTANT the previous results of the AI software, the DISTRICT may request the CONSULTANT to use AI to process un-coded sewer inspection videos or digital imagery scans.

DISTRICT DELIVERABLES

The DISTRICT will provide the following information to CONSULTANT with the Notice to Proceed for each project:

- a. **PACP Database**
Microsoft Access Database with inspection data recorded in accordance with the NASSCO PACP standards.
- b. **Inspection Videos or Digital Imagery Scans**
Inspection data and viewing software (e.g. 360 Player Files or MPG video files or similar) for each surveyed sewer main.

CONSULTANT DELIVERABLES

Specific CONSULTANT deliverables for this Bid Item are listed below:

- a. **AI Algorithm Technical Memorandum**
Documentation of the sewer defect identification algorithm
- b. **Sewer Defect Identification Algorithm Technical Memorandum**
Documentation of the findings of the project.
- c. **PACP Database**
AI-processed Microsoft Access Database with inspection data recorded in accordance with the most current version of NASSCO PACP standards for DISTRICT provided un-coded videos and scans.
- d. **Videos and Scans with Coding**
AI-processed videos and scans and viewing software shall be submitted for coded sewer mains. Viewing software shall have a hyperlinked list all the inspections and coded observations for the user to navigate through the inspection video or scan.