



September 22, 2020

INVITATION TO BID  
**BL098-20**

The Gwinnett County Board of Commissioners is soliciting competitive sealed bids from qualified contractors for the **Sewer & Stormwater Assessment Program on an Annual Contract** with four (4) options for contract renewal for the Department of Water Resources.

Bids should be typed or submitted in ink and returned in a sealed container marked on the outside with the BL# and Company Name. Bids will be received until 2:50 P.M. local time on **October 14, 2020** at the Gwinnett County Financial Services - Purchasing Division – 2<sup>nd</sup> Floor, 75 Langley Drive, Lawrenceville, Georgia 30046. Any bid received after this date and time will not be accepted. Bids will be publicly opened and read at 3:00 P.M. Apparent bid results will be available the following business day on our website [www.gwinnettcounty.com](http://www.gwinnettcounty.com).

Questions regarding bids should be directed to Shelley McWhorter, Purchasing Associate III at [shelley.mcwhorter@gwinnettcounty.com](mailto:shelley.mcwhorter@gwinnettcounty.com) or by calling 770-822-8734, no later than October 2, 2020. Bids are legal and binding upon the bidder when submitted. All bids should be submitted in duplicate.

All suppliers must submit with bid, a bid bond, certified check or cashier's check in the amount of five percent (5%) of the total bid. **Failure to submit a bid bond with the proper rating will result in the bid being deemed non-responsive.** Successful supplier will be required to meet insurance requirements, submit a one hundred percent (100%) performance bond and a one hundred percent (100%) payment bond. **(Separate Payment and Performance bonds may be required per section based on the award.)** Insurance and Bonding Company should be licensed to do business by the Georgia Secretary of State, authorized to do business in Georgia by The Georgia Insurance Department, listed in the Department of Treasury's Publication of Companies holding Certificates of Authority as Acceptable Surety on Federal Bonds and as acceptable reinsuring companies. **The bid bond, payment bond, and performance bond must have an A.M. Best rating of A-6 or higher.**

Gwinnett County does not discriminate on the basis of disability in the admission or access to its programs or activities. Any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County Government should be directed to Michael Plonowski, Gwinnett County Justice and Administration Center, 770-822-8015.

The written bid documents supersede any verbal or written prior communications between the parties.

Award will be made to the contractor submitting the lowest responsive and responsible bid. Gwinnett County reserves the right to reject any or all bids to waive technicalities and to make an award deemed in its best interest. Bids may be split or awarded in entirety. Gwinnett County reserves the option to negotiate terms, conditions and pricing with the lowest responsive, responsible bidder(s) at its discretion.

Award notification will be posted after award on the County website, [www.gwinnettcounty.com](http://www.gwinnettcounty.com) and companies submitting a bid will be notified via email.

We look forward to your bid and appreciate your interest in Gwinnett County.

Shelley McWhorter, CPPB  
Purchasing Associate III

The following pages should be returned in duplicate as your bid:

- Section A Bid Schedule
- Section B Bid Schedule
- References/Experience/Requirements of the Contractor
- Contractor Identification/Profile and Qualifications of Key Personnel
- Subcontractor list
- Bid Bond
- Contractor Affidavit & Agreement
- Ethics Affidavit

## **GWINNETT COUNTY SEWER AND STORM WATER ASSESSMENT PROGRAM**

### **I. OVERVIEW**

Gwinnett County is soliciting competitive, sealed bids for services related to the inventory and condition assessment of the County's Sanitary Sewer and Stormwater Systems on an Annual Contract with the option of four (4) offers for contract renewal for the Department of Water Resources (DWR).

This contract is divided into two distinct, separately managed sections. Each section has an independent scope with different requirements and specifications. Contractors may bid on either one or both sections, and each section will be awarded independently. Should both sections be awarded to the same Contractor, that Contractor shall be required to maintain appropriate levels of staff and equipment to meet all demands of both sections.

The solicitation is broken down into the following format:

#### General Specifications/Requirements applying to both sections

Section A: Stormwater Condition Assessment Program  
Specific scope, specifications, requirements, and Bid Form

Section B: Sewer Condition Assessment Program  
Specific scope, specifications, requirements, and Bid Form

#### General Forms applying to both sections

DWR has initiated this program with the objective of inventorying and assessing the County's Sewer and Storm Systems. This objective will be achieved by locating, inspecting and evaluating the County's assets. This Contract will be issued on an annual basis, with no guaranteed minimum or maximum amount of work. The work will be procured on an "as-needed" basis and it is intended that planned work will be spread equitably across the year. Contractor must be capable of performing the requested work in a timely manner and produce quality results. The data that is collected will be put into the County's Computerized Maintenance Management System (CMMS).

DWR has not mandated the use of any specific type of equipment or materials; however, the Contractor shall utilize the nationally recognized NASSCO published PACP and MACP standards for conducting CCTV and manhole inspections. The Contractor shall also use the Gwinnett County Sewer and Stormwater System Rehabilitation Specifications (SSRs) for the details that are related to each task. The Contractor shall use the means and methods as described in the Bid and used as a basis of selection. The Contractor shall not use any other methods than proposed without the express written permission of DWR.

The Contractor shall utilize reliable and efficient equipment. DWR has the right to disapprove of any equipment that does not meet or exceed the equipment specified within this solicitation. Repetitive and/or excessive lost/poor quality/missed data and/or equipment failures, as determined by DWR, are the responsibility of the Contractor to correct and will not be invoiced to DWR. Continuous lost or poor quality data shall constitute just cause for dismissal.

### **II. GENERAL INFORMATION/REQUIREMENTS TO BOTH A AND B**

A. Normal working hours for all field related work will be 7:00 A.M. to 6:00 P.M. local time, Monday through Friday. Certain situations may arise that will limit these normal hours. Work outside the normal hours, on holidays and weekends, will require written approval from DWR.

- B. Field related work requiring the assistance of Department personnel must be scheduled a minimum of 48-hours in advance.
- C. Existing data shall be utilized to the fullest extent possible to avoid spending time and cost in collecting data already available. Geographical and inventory data which will be used to conduct the inspections shall be provided to the Contractor at no cost when it is available.
- D. DWR's current version of GIS (version 10.6.1 sp1 as of May 2019) includes sanitary sewer and storm pipes (sizes & materials), manholes, catch basins, junction boxes, and other sewer and stormwater structures. The GIS is updated regularly. Each of the above items has been assigned a County "Facility ID" number. These facility numbers will be utilized and referenced by the selected Contractor throughout the life of the project. The GIS database also contains roads, parcels, topographical data, and surface features such as streams. It is the Contractor's responsibility to acquire new geographic data files when entering into a new area. These will be provided in electronic format only, either as personal geodatabase or shape (.shp) files.
- E. The Contractor will provide public notification of all field activities including field-monitoring and field-data collection. The Contractor will provide these notifications on a daily basis per the technical specifications.
- F. All field staff (Contractor as well as sub-consultants and sub-contractors) must wear, at all times, a readily observable identification badge indicating their name and the name of the Contractor's firm. All vehicles used in the field must have a company logo on both the driver and passenger side of the vehicle that is easily read from a distance.
- G. The Contractor shall identify a contact person or persons who shall be on call 24-hours per day during the life of the project. The Contractor's contact person(s) is/are responsible to know the general location of all field crews every day and must have the means to contact them within 15 minutes.
- H. The Contractor has the responsibility for maintenance of traffic when working in any right-of-way. The Contractor shall submit traffic control plans through DWR and follow all of Gwinnett County's DOT standards. The Contractor is responsible for obtaining all required permits. There shall be no direct payment to the Contractor for development and/or implementation of traffic control plans and permits. These costs shall not be paid separately and shall be included as a part of the individual inspection unit prices.
- I. On a monthly basis, the Contractor shall prepare and submit an electronic written description of all discrepancies found between DWR's records and the actual mapped systems. This description shall include drawn maps of any incorrect systems with temporary and actual Facility ID numbers clearly identified as well as geographical references such as street addresses. Notations shall be made on the map if the structures are covered/buried. The Contractor shall also submit a list of miss matched pipe materials and diameters as well as flow direction changes in excel and pdf formats.
- J. The Contractor shall not operate Department valves, hydrants, pump stations, or any other facilities/appurtenances without Department employees present and assisting in the operations.
- K. The Contractor, as well as all sub-consultants utilized by the Contractor, must be properly licensed in the State of Georgia.
- L. The Contractor shall have the ability to communicate with all crews and with DWR at all times. The Contractor shall have a cellular telephone at which the superintendent can be reached at any time while

the work is under way. The Contractor shall provide daily notification of work locations to DWR and the Contract manager. The Contractor shall also immediately notify DWR and the Contract Manager in the event that a point repair is needed or if any damage occurs to the County's sewer or stormwater systems during the scope of work.

### **III. BIDDING REQUIREMENTS**

- A. The successful Contractor will be required to meet insurance requirements, submit a 100% Payment Bond for the amount of the Contractor's bid. A payment bond may be required on each subsequent option to renew in an amount as stipulated and/or as negotiated by the County. Bonding Company should be authorized to do business in Georgia by the Georgia Insurance Department; in addition they should be listed in the Department of Treasury's Publication of Companies holding Certificates of Authority as Acceptable Surety on Federal Bonds and must have an A.M. Best rating of A-V or higher.
- B. Bidder is to return a notarized Contractor Affidavit and Agreement and a Code of Ethics along with the bid submittal.
- C. Bidder may bid on Section A or B, or both. Bidder must specify whether they are bidding on section A, B, or both. If the vendor submits a bid on both, the County reserves the right to request proof of company resources required to satisfy the performance of both Sections. Work will be assigned on an as needed basis for each Section and will not be coordinated between sections. Failure to satisfy the requirements set forth in this solicitation and/or poor performance will be grounds for the County to Terminate for Cause. The County reserves the right to terminate by Section or terminate the entire Contract. Such action will be based upon the seriousness of the contract breach.
- D. On the outside of the envelope, the Bidder must identify the appropriate Section the bid is being submitted for consideration. Indicate "Section A", "Section B", OR " BOTH Sections" beside the BL # and the Bidder's name. 3

GENERAL CONDITIONS  
To Service Provider AGREEMENT

Article

- 1 Definitions
- 2 Contract Documents
- 3 Changes and Extra Work
- 4 Personnel and Equipment
- 5 Accuracy of Work
- 6 Findings Confidential
- 7 Termination of Agreement for Cause
- 8 Termination for Convenience of the COUNTY
- 9 SERVICE PROVIDER to Cooperate with other SERVICE PROVIDERS
- 10 Indemnification
- 11 Covenant Against Contingent Fees
- 12 Insurance
- 13 Prohibited Interests
- 14 Subcontracting
- 15 Assignability
- 16 Equal Employment Opportunity
- 17 Anti-Kickback Clause
- 18 Audits and Inspectors
- 19 Ownership, Publication, Reproduction and Use
- 20 Verbal Agreement or Conversation
- 21 Independent Service provider
- 22 Notices

## 1 DEFINITIONS

Wherever used in this Agreement, whether in the singular or in the plural, the following terms shall have the following meanings:

- 1.1 COUNTY-means Gwinnett County, Georgia, a political subdivision of the State of Georgia.
- 1.2 SUPPLEMENTAL AGREEMENT-means a written order to SERVICE PROVIDER signed by COUNTY and accepted by SERVICE PROVIDER, effecting an addition, deletion or revision in the Work, or an adjustment in the Agreement Price or the Contract Time, issued after execution of this Agreement.
- 1.3 CONTRACT-means the Agreement Documents specifically identified and incorporated herein by reference in Section 2, CONTRACT DOCUMENTS.
- 1.4 AGREEMENT EXECUTION-means the date on which SERVICE PROVIDER executes and enters into an Agreement with the COUNTY to perform the Work.
- 1.5 AGREEMENT PRICE-means the total monies, adjusted in accordance with any provision herein, payable to the SERVICE PROVIDER under this Agreement.
- 1.6 CONTRACT TIME-means the period of time stated in this Agreement for the completion of the Work.
- 1.7 SERVICE PROVIDER-means the party or parties contracting directly with the COUNTY to perform Work pursuant to this Agreement.
- 1.8 DEPARTMENT- means the Director or designee of requesting department(s) named in this solicitation.
- 1.9 DRAWINGS-means collectively, all the drawings, receipt of which is acknowledged by the COUNTY, listed in this Agreement, and also such supplementary drawings as the SERVICE PROVIDER may issue from time to time in order to clarify or explain such drawing or to show details which are not shown thereon.
- 1.10 SPECIFICATIONS-means the written technical provisions including all appendices thereto, both general and specific, which form a part of the Agreement Documents.
- 1.11 SUBSERVICE PROVIDER-means any person, firm, partnership, joint venture, company, corporation, or entity having a contractual agreement with SERVICE PROVIDER or with any of its subservice providers at any tier to provide a part of the Work called for by this Agreement.
- 1.12 WORK-means any and all obligations, duties and responsibilities, including furnishing equipment, engineering, design, workmanship, labor and any other services or things necessary to the successful completion of the Project, assigned to or undertaken by SERVICE PROVIDER under this Agreement.
- 1.13 LIAISON-Representative of the COUNTY who shall act as Liaison between the County and the SERVICE PROVIDER for all matters pertaining to this Agreement, including review of SERVICE PROVIDER'S plans and work.

## 2 CONTRACT DOCUMENTS

### 2.1 LIST OF DOCUMENTS

The Agreement, any required bonds, the General Conditions, the Appendices, the Detailed Scope of Work, the Specifications, the Drawings, the Exhibits, and all Agreement Supplemental Agreements shall constitute the Agreement Documents.

### 2.2 CONFLICT AND PRECEDENCE

2.2.1 The Agreement Documents are complementary, and what is called for by one is as binding as if called for by all. In the event there are any conflicting provisions or requirements in the component parts of this Agreement, the several Agreement Documents shall take precedence in the following order:

1. Supplemental Agreements
2. Agreement
3. General Conditions
4. Detailed Scope of Work
5. Specifications
6. Drawings

## 3 CHANGES AND EXTRA WORK

The COUNTY may, at any time, request changes in the work to be performed hereunder. All such changes, including any increase or decrease in the amount of the SERVICE PROVIDER'S compensation, which are mutually agreed upon by and between the COUNTY and the SERVICE PROVIDER, shall be incorporated in written Supplemental Agreements to the Agreement.

## 4 PERSONNEL AND EQUIPMENT

The SERVICE PROVIDER represents that it has secured or will secure, at its own expense, all personnel necessary to complete this Agreement; none of whom shall be employees of, or have any contractual relationship with, the COUNTY. Primary liaison with the COUNTY will be through its designee. All of the services required hereunder will be performed by the SERVICE PROVIDER under its supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under law to perform such services.

The SERVICE PROVIDER shall employ only persons duly registered in the appropriate category in responsible charge of supervision and design of the work; and further shall employ only qualified surveyors in responsible charge of any survey work.

The SERVICE PROVIDER shall endorse all reports, contract plans, and survey data. Such endorsements shall be made by a person duly registered in the appropriate category by the Georgia State Board of Registration, being in the full employ of the SERVICE PROVIDER and responsible for the work prescribed by this Agreement.

## 5 ACCURACY OF WORK

The SERVICE PROVIDER shall be responsible for the accuracy of the work and shall promptly correct errors and omissions in its plans and specifications without additional compensations.

Acceptance of the work by the COUNTY will not relieve the SERVICE PROVIDER of the responsibility for subsequent correction of any errors and the clarification of any ambiguities.

## 6 FINDINGS CONFIDENTIAL

The SERVICE PROVIDER agrees that its conclusions and any reports are for the confidential information of the COUNTY and that it will not disclose its conclusions in whole or in part to any persons whatsoever, other than to

submit its written documentation to the COUNTY, and will only discuss the same with it or its authorized representatives. Upon completion of this Agreement term, all documents, reports, maps, data and studies prepared by the SERVICE PROVIDER pursuant thereto shall become the property of the COUNTY and be delivered to the DEPARTMENT.

Articles, papers, bulletins, reports, or other materials reporting the plans, progress, analyses, or results and findings of the work conducted under this Agreement shall not be presented publicly or published without prior approval in writing of the COUNTY.

It is further agreed that if any information concerning the PROJECT, its conduct, results, or data gathered or processed should be released by the SERVICE PROVIDER without prior approval from the COUNTY, the release of same shall constitute grounds for termination of this Agreement without indemnity to the SERVICE PROVIDER, but should any such information be released by the COUNTY or by the SERVICE PROVIDER with such prior written approval, the same shall be regarded as public information and no longer subject to the restrictions of this Agreement.

#### 7 TERMINATION OF AGREEMENT FOR CAUSE

If through any cause the SERVICE PROVIDER shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the SERVICE PROVIDER shall violate any of the covenants, agreements or stipulations of this Agreement, the COUNTY shall thereupon have the right to terminate this Agreement by giving written notice to the SERVICE PROVIDER of such termination, and specifying the effective date thereof, at least ten (10) days before the effective date of such termination. Failure to maintain the scheduled level of effort as proposed and prescribed, or deviation from the aforesaid scheduler without prior approval of the COUNTY shall constitute cause for termination. In such event, all finished or unfinished documents, maps, data, studies, work papers and reports prepared by the SERVICE PROVIDER under this Agreement shall become the property of the COUNTY, and the SERVICE PROVIDER shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents, as determined by the COUNTY.

#### 8 TERMINATION FOR CONVENIENCE OF THE COUNTY

The COUNTY may terminate this Agreement for its convenience at any time upon 30 days notice in writing to the SERVICE PROVIDER. If the Agreement is terminated by the COUNTY as provided in this Article 8, the SERVICE PROVIDER will be paid compensation for those services actually performed. Partially completed tasks will be compensated for based on a signed statement of completion to be submitted by the SERVICE PROVIDER which shall itemize each task element and briefly state what work has been completed and what work remains to be done.

All such expenses shall be properly documented and submitted to the COUNTY for processing and payment. The County shall be the final authority in the event of any disputes over authorized costs between the COUNTY and the Service Provider.

#### 9 SERVICE PROVIDERS TO COOPERATE WITH OTHER SERVICE PROVIDERS

If the COUNTY undertakes or awards other contracts for additional related work, the SERVICE PROVIDER shall fully cooperate with such other SERVICE PROVIDERS and the COUNTY employees or appointed committee(s), and carefully fit its own work to such additional work as may be directed by the COUNTY. The SERVICE PROVIDER shall not commit or permit any act which will interfere with the performance of work by any other SERVICE PROVIDER or COUNTY employees.

#### 10 INDEMNIFICATION

SERVICE PROVIDER agrees to protect, defend, indemnify, and hold harmless the COUNTY, its commissioners, officers, agents and employees from and against any and all liability, damages, claims, suits, liens, and judgments, for whatever nature, including claims for contribution and/or indemnification, for injuries to or death



of any person or persons, or damage to the property or other rights of any person or persons to the extent arising out of and attributed to the negligent acts, errors or omissions of the SERVICE PROVIDER. SERVICE PROVIDER'S obligation to protect, defend, indemnify, and hold harmless, as set forth herein above shall include any matter arising out of any patent, trademark, copyright, or service mark, or any actual or alleged unfair competition disparagement of product or service, or other business tort of any type whatsoever, or any actual or alleged violation of trade regulations.

SERVICE PROVIDER further agrees to protect, defend, indemnify, and hold harmless the COUNTY, its commissioners, officers, agents, and employees from and against any and all claims or liability for compensation under the Worker's Compensation Act arising out of injuries sustained by any employee of the SERVICE PROVIDER.

#### 11 COVENANT AGAINST CONTINGENT FEES

The SERVICE PROVIDER warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by SERVICE PROVIDER for the purpose of securing business and that the SERVICE PROVIDER has not received any non-COUNTY fee related to this Agreement without the prior written consent of the COUNTY. For breach or violation of this warranty, the COUNTY shall have the right to annul this Agreement without liability or at its discretion to deduct from the Agreement Price of consideration the full amount of such commission, percentage, brokerage or contingent fee.

#### 12 INSURANCE

The SERVICE PROVIDER shall, at all times that this Agreement is in effect, cause to be maintained in force and effect an insurance policy (s) that will ensure and indemnify both GWINNETT COUNTY and SERVICE PROVIDER against liability or financial loss resulting from injuries occurring to persons or property or occurring as a result of any negligent error, act, or omission of the SERVICE PROVIDER during the term of this Agreement. The liability under such insurance policy shall be not less than as stated in the Bid Proposal.

The SERVICE PROVIDER shall provide, at all times that this Agreement is in effect, Worker's Compensation insurance in accordance with the laws of the State of Georgia.

The SERVICE PROVIDER shall provide, at all times that this Agreement is in effect, Professional Liability Insurance with a limit of not less than that as stated in the Bid Proposal.

Additionally, SERVICE PROVIDER shall provide, at all times that this Agreement is in effect, automobile liability insurance with a limit of not less than that as stated in the Bid Proposal.

The policies shall be written by a responsible company(s), to be approved by the COUNTY, and shall be non-cancelable except on thirty-(30) days' written notice to the COUNTY. Such policies shall name the COUNTY as additional insured, except for worker's compensation and professional liability policies, and a copy of such policy or a certificate of insurance shall be filed with the Director at the time of the execution of this Agreement.

#### 13 PROHIBITED INTERESTS

13.1 Conflict of Interest: The SERVICE PROVIDER agrees that it presently has no interest and shall acquire no interest, direct or indirect, that would conflict in any manner or degree with the performance of its services hereunder.

13.2 Interest of Public Officials: No member, officer, or employee of the COUNTY during his tenure or for one year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

#### 14 SUBCONTRACTING

The SERVICE PROVIDER shall not subcontract any part of the work covered by this Agreement or permit subcontracted work to be further subcontracted without the DEPARTMENT's prior written approval of the subservice provider, except as may have been specifically stated in the SERVICE PROVIDER'S response to proposal per Exhibit A. The DEPARTMENT will not approve any subservice provider for work covered by this Agreement that has not been recommended for approval by the Department Director.

All subcontracts in the amount of \$5,000 or more shall include the provisions set forth in this Agreement.

#### 15 ASSIGNABILITY

The SERVICE PROVIDER shall not assign or transfer whether by an assignment or novation, any of its rights, obligations, benefits, liabilities or other interest under this Agreement without the written consent of the COUNTY.

#### 16 EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this Agreement, the SERVICE PROVIDER agrees as follows: (1) the SERVICE PROVIDER will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin; (2) the SERVICE PROVIDER will, in all solicitations or advertisements for employees placed by qualified applicants, receive consideration for employment without regard to race, creed, color, sex or national origin; (3) the SERVICE PROVIDER will cause the foregoing provisions to be inserted in all subcontracts for any work covered by the Agreement so that such provision will be binding upon each subservice provider, provided that the foregoing provision shall not apply to contracts or subcontracts for standard commercial supplies of raw materials.

#### 17 ANTI-KICKBACK CLAUSE

Salaries of architects, draftsmen, technical engineers and engineers, and technicians performing work under this Agreement shall be paid unconditionally and not less often than once a month without deduction or rebate on any account except only such payroll deductions as are mandatory by law. The SERVICE PROVIDER hereby promises to comply with all applicable "Anti-kickback" laws, and shall insert appropriate provisions in all subcontracts covering work under this Agreement.

#### 18 AUDITS AND INSPECTORS

At any time during normal business hours and as often as the COUNTY may deem necessary, the CONSULTANT shall make available to the COUNTY for examination all of its records with respect to all matters covered by this Agreement. It shall also permit the COUNTY to audit, examine and make copies, excerpts or transcripts from such records of personnel, conditions of employment and other data relating to all matters covered by this Agreement.

The SERVICE PROVIDER shall maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred on the Project and used in support of its proposal and shall make such material available at all reasonable times during the period of the Agreement, and for three years from the date of final payment under the Agreement, for inspection by the COUNTY or any reviewing agencies, and copies thereof shall be furnished upon request. The SERVICE PROVIDER agrees that the provisions of this Article shall be included in any Agreements it may make with any subservice provider, assignee, or transferee.

#### 19 OWNERSHIP, PUBLICATION, REPRODUCTION AND USE

All documents and materials prepared pursuant to this Agreement are the property of the COUNTY. The COUNTY shall have the unrestricted authority to publish, disclose, distribute, and otherwise use, in whole or in part, any reports, data, maps, or other materials prepared under this Agreement without according credit of authorship. The COUNTY shall hold harmless and indemnify the SERVICE PROVIDER against all claims arising out of such use of documents and materials without the SERVICE PROVIDER'S knowledge and consent.

20 VERBAL AGREEMENT OR CONVERSATION

No verbal agreement or conversation with any officer, agent, or employee of the COUNTY, either before, during, or after the execution of this Agreement, shall affect or modify any of the terms or obligations herein contained, nor shall such verbal agreement or conversation entitle the SERVICE PROVIDER to any additional payment whatsoever under the terms for this Agreement. All changes to this Agreement shall be in writing and appended hereto as prescribed in Article 3 above.

21 INDEPENDENT SERVICE PROVIDER

The SERVICE PROVIDER shall perform the services under this Agreement as an independent service provider and nothing contained herein shall be construed to be inconsistent with this relationship or status. Nothing in this Agreement shall be interpreted or construed to constitute the SERVICE PROVIDER or any of its agents or employees to be the agent, employee, or representative of the COUNTY.

22 NOTICES

All notices shall be in writing and delivered in person or transmitted by certified mail, postage prepaid.

# **SECTION A**

## **GWINNETT COUNTY**

### **STORMWATER CONDITION**

#### **ASSESSMENT PROGRAM**

## **GWINNETT COUNTY STORMWATER CONDITION ASSESSMENT PROGRAM**

### **SECTION A**

#### **PART 1 - PROJECT DESCRIPTION**

##### **1.1 PURPOSE**

- A. The Stormwater Condition Assessment Program provides data that is a portion of Gwinnett County's permit compliance, and the numerical goals set forth each reporting year are required to be met within a specific time period. The Contractor shall meet these goals, providing quality data that is transferrable to the County's Computerized Maintenance Management System (CMMS).
- B. The numerical goals shall be met through line lamping inspections and CCTV color inspections as needed. Inspections for line lamping shall be assigned through the use of GIS shapefiles, and CCTV inspections shall be assigned through the use of digital maps. Cleaning work may also be assigned as needed. There is no guarantee as to the maximum or minimum amount of work requested.

##### **1.2 RELATED SECTIONS OF THE SYSTEM SPECIFICATIONS**

- A. Section SWR 1, SWR 1\_Storm Television Inspection For Condition Assessment
- B. Section SWR 2, SWR 2\_Storm Cleaning
- C. Section SWR 3, SWR 3\_Storm Pole Camera Inspection For Condition Assessment
- D. Section SWR 4, SWR 4\_Survey
- E. Miscellaneous Services

#### **PART 2 – SCOPE OF SERVICES**

The Contractor shall supply all labor, equipment, tools, and vehicles necessary to inspect, assess and clean the County's stormwater system and its attributes that are assigned to them under this contract. Field assessments include but are not limited to: locating, inspecting, CCTV, GPS and cleaning of all assigned assets.

##### **2.1 General Notes**

- A. Numerous structures and pipes are located in wooded easements. The Contractor is to be aware that the location of these structures may prevent access. The Contractor must make sure to include the more remote inspection sites within the main body of work performed on a daily basis.
- B. If the Contractor discovers a missing structure lid, the Contractor must immediately install a replacement lid (Replacement lids will be supplied by DWR). If the Contractor is unable to install a replacement lid for any reason, the Contractor will notify DWR's Contract manager immediately.
- C. The Contractor is expected to tamp down the area directly surrounding each structure inspected to ensure that there are no holes present at time of inspection. If the Contractor discovers any hole near or over a stormwater system, the Contractor must immediately notify DWR. The Contractor shall be required to install caution tape attached to wooden stakes to warn the public of the hole before leaving the site and to document with surface pictures or video showing the installed caution tape.
- D. The Contractor shall have the ability to communicate with all crews and DWR at all times. The Contractor shall have a cellular telephone with a LOCAL telephone number at which the

Project manager can be reached at any time while the work is underway. The Contractor shall provide daily notifications of work locations to DWR's Contract manager. The Contractor shall also immediately notify DWR's Contract manager in the event that a point repair is needed.

**2.2 STRUCTURE AND PIPELINE INSPECTIONS (refer to SWR 3 specs for further detail)**

The Contractor shall inspect structures in the assigned area(s), meeting the numerical and time goals set forth by DWR and documenting those inspections in the Stormwater Structure Inspection database. The Contractor shall locate every structure assigned. Structure inspection may include use of remote Zoom camera and line lamping as well as digital photos.

A. Pipelines shall be inspected utilizing pole cameras and graded using PACP protocols.

**2.3 CCTV COLOR INSPECTIONS (refer to SWR 1 specs for further detail)**

CCTV color inspections will be used to accurately code and rate the current condition of the County's storm lines. The Contractor shall only TV lines as directed by the DWR. Each pipeline CCTV inspection will be documented, coded, and rated utilizing NASSCO PACP compliant database version 6.2 or higher.

**2.4 PROJECT MANAGEMENT**

Project management includes those activities involved with the detailed planning and subsequent execution, monitoring, and control of the project. The level of effort and budget for such services shall be considered and included in the individual tasks and unit costs of the project. In developing the Bid Schedule, DWR expects the Contractor to provide the following services throughout the project:

- A. Structures will be assigned by DWR for inspection by the Contractor in the form of shapefiles compatible with version 10.6.1 sp1 as of May 2019. The Contractor will use the shapefiles to locate and inspect structures and associated pipes using protocols described in Attachment 6.
- B. Monthly deliverables shall be submitted to DWR's Contract manager in the format specified. Deliverables shall be submitted no later than 4 weeks after the end of the inspection month.
- C. Upon approval of a deliverable, the monthly invoice will be submitted to DWR's Contract manager with an itemized listing of each item including identifying Facility IDs. After it is approved, the invoice shall be submitted by the Contractor to the Department of Financial Services. The monthly invoice will be submitted utilizing the template format as provided by DWR.
- D. Coordination with DWR, other utility companies, and all local, State, or Federal departments or agencies, as required for the proper execution of the work, shall be maintained throughout the life of the project. This coordination shall include arranging meetings, resolving technical issues, and coordinating tasks that will involve DWR's personnel.
- E. DWR's Contract manager will be DWR's primary point of contact for the Contractor throughout the life of the project.
- F. The Contractor's project manager will be the Contractor's primary point of contact for DWR throughout the life of the project.

**2.5 QA/QC**

The Contractor shall develop a plan for Quality Assurance/Quality Control (QA/QC). This plan shall include both office and field related QA/QC practices of the Contractor and all sub-

consultants/sub-contractors. The selected Contractor shall submit a written QA/QC plan for DWR's files prior to conducting any work. DWR will not approve the plan but will expect the Contractor to abide by their QA/QC plan. The plan must include a system of checks and balances that ensures that all information including but not limited to, data, reports, drawings, and GIS is subjected to QA/QC protocols before submittal to DWR.

- A. A written statement confirming that each submittal has been reviewed using QA/QC protocol by the Contractor must accompany every submittal to DWR.
- B. All project deliverables are to be prepared and delivered in the approved digital format.

## **2.6 SAFETY**

Safety is utmost importance to DWR. The Contractor will conduct the project in a safe manner so that no accidents occur. The Contractor shall submit a written comprehensive safety plan to the DWR's Contract manager.

DWR will not approve the Safety Plan but will hold the Contractor accountable to the Safety Plan. The Safety Plan must meet all Federal, State, and County laws as well as local requirements. The Contractor's personnel must be completely familiar with the Safety Plan and trained in all safety procedures required for the safe execution of this project.

The Contractor will ensure all sub-consultants and sub-contractors have active safety programs at least as comprehensive as the Contractor's.

## **PART 3 - INFORMATION TO BE PROVIDED IN THE BID**

### **3.1 CONTRACTOR IDENTIFICATION/PROFILE**

Give the full legal name of the Contractor, the Contractor's principal business office and its satellite offices, if any, and indicate the location(s) from which these services for DWR would be staged. Provide the location of the Contractor and the driving distance to DWR Central Facility. Give information on the Contractor's history, business activities, size, employees, officers, affiliates, subsidiaries, ownership, and other corporate data. Project teams are acceptable, provided that overall project accountability is with the lead Contractor. If an association with other firms(s) is proposed, describe the working relationship, identify specific areas of responsibility of each firm, and identify the lead firm that will have overall project accountability as well as any specific past experiences with said firm(s) and the working relationship.

### **3.2 REFERENCES/EXPERIENCE/REQUIREMENTS OF THE CONTRACTOR**

For the tasks of structure assessments, pipeline inspections, and CCTV inspections, the Contractor, through references provided, must demonstrate a minimum level of experience of three (3) completed projects within the last 7 years of similar size and scope.

Projects of similar size and scope should include a minimum of:

1. 24,000 structures with associated pipes inspected,
2. 90,000 lf of CCTV, and
3. 90,000 lf of pipeline cleaning.

References should detail the experience of the Contractor with similar projects and other relevant experience. Similar projects are projects that required the same level of service or greater at the same order of magnitude or greater as will be required for this project. The experience must be that of the Contractor and not that of a parent or related company or the experience of an individual(s). Contractor must have been in business for a minimum of five (5) years.

### **3.3 QUALIFICATIONS AND EXPERIENCE OF KEY PERSONNEL**

The Project Manager shall be qualified to lead this project and must have a minimum of five (5) years of experience as a project manager on similar projects. Experience with previous employers on similar projects is acceptable. The project manager shall have been in leadership roles on inventory and condition assessment projects of similar scale, including preparation of reports, management of field-monitoring, management of field-data collection, analysis, management of data, experience with GIS and Quality Assurance, and have the authority to commit the necessary resources of the Contractor.

- A. The Data Manager shall have been in leadership roles on inventory and condition assessment projects of similar scale including three (3) years of experience in preparation of reports, management of field-data collection, data analysis, data management, GIS, and Quality Assurance.
- B. All personnel conducting and/or evaluating inspections shall be PACP certified. If the Contractor's personnel have not been trained in and are not currently certified in the use of NASSCO's Pipeline Assessment and Certification Program (PACP), then the Contractor personnel must obtain the training and certification at the cost of the Contractor before working on this project and must provide written documentation of certification to DWR.
- C. No crewmembers shall enter confined spaces without the necessary certified training and at least one-year experience as well as written permission from DWR.
- D. The Contractor shall provide the County with written documentation that the Project Manager and Data Manager have the requisite experience as outlined above. This documentation shall be submitted as a part of the bid.

### **3.4 SCHEDULE**

It is anticipated that this project will require 12 months of steady data collection.

### **3.5 BID SCHEDULE**

The Bid Schedule shall be submitted using the form as provided in this document. The format should not be changed. The Bid Schedule includes unit price line items for both office and field related activities. Unless otherwise stated, the cost associated with all activities will include all overhead, ODC's, QA/QC costs, safety costs including traffic control, project management, labor, field-monitoring, field-data collection, analysis, in office data management, etc. to complete each activity in compliance with these specifications. All items on the Bid Schedule should be completed.



FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION OF BID.

**STORMWATER ASSESSMENT PROGRAM BID SCHEDULE**

ITEM #	DESCRIPTION	UNIT	UNIT COST (see note 1 below)	APPROX. ANNUAL QUANTITY	TOTAL
<b>GPS/MAPPING</b>					
1	GPS Asset Location (survey grade GPS)	EA	\$	600	\$
<b>INSPECTION SERVICES</b>					
2	Structure Inspection (MACP Level 1)	EA	\$	12,000	\$
3	Zoom Camera Structure Inspection/Line Lamping (PACP Level 2)	EA	\$	12,000	\$
<b>BYPASS PUMPING</b>					
4	Setup for 3"- 6" Pump	EA	\$	1	\$
5	Setup for 8"- 12" Pump	EA	\$	1	\$
6	Discharge Line for 3"- 6" Pump	LF	\$	500	\$
7	Discharge Line for 8"- 12" Pump	LF	\$	500	\$
8	Operation of 3"- 6" Pump	HR	\$	10	\$
9	Operation of 8"- 12" Pump	HR	\$	10	\$
<b>STORM LINE TELEVISION INSPECTION</b>					
10	up to 18"	LF	\$	25,000	\$
11	19" to 24"	LF	\$	35,000	\$
12	25" to 36"	LF	\$	20,000	\$
13	37" to 48"	LF	\$	8,500	\$
14	49" to 72"	LF	\$	2,000	\$
15	73" to 108"	LF	\$	500	\$
16	Emergency TV Surcharge (5 day turn around)	EA	\$	100	\$
<b>STORM LINE CLEANING</b>					
<b>Light Cleaning of Storm Line - material and debris equal to no more than 25% diameter of pipe</b>					
17	up to 18"	LF	\$	15,000	\$
18	19" to 24"	LF	\$	20,000	\$
19	25" to 36"	LF	\$	10,000	\$
20	37" to 48"	LF	\$	7,500	\$
21	49" to 72"	LF	\$	2,000	\$
22	73" to 108"	LF	\$	500	\$

COMPANY NAME: \_\_\_\_\_

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**STORMWATER ASSESSMENT PROGRAM BID SCHEDULE**

ITEM #	DESCRIPTION	UNIT	UNIT COST (see note 1 below)	APPROX. ANNUAL QUANTITY	TOTAL
<b>Heavy Cleaning of Storm Line - material and debris equal to more than 25% diameter of pipe</b>					
23	up to 18"	LF	\$	15,000	\$
24	19" to 24"	LF	\$	5,000	\$
25	25" to 36"	LF	\$	3,000	\$
26	37" to 48"	LF	\$	2,000	\$
27	49" to 72"	LF	\$	1,000	\$
28	73" to 108"	LF	\$	500	\$
<b>Specialty Cleaning of Storm Line - Heavy roots, large diameter rocks and debris.</b>					
29	up to 18"	LF	\$	5,000	\$
30	19" to 24"	LF	\$	2,000	\$
31	25" to 36"	LF	\$	1,500	\$
32	37" to 48"	LF	\$	500	\$
33	49" to 72"	LF	\$	200	\$
34	73" to 108"	LF	\$	50	\$
<b>SECTION A TOTAL</b>					<b>\$</b>
<b>MISCELLANEOUS SERVICES</b>					
Labor & Materials, cost plus % (not to exceed 10%)					%

**NOTES:**

1. Pricing to include all expenses, overhead and profit.
2. Please pay close attention to "UNIT" values when quoting pricing.
3. Pricing is to be provided for ALL items.
4. Some items may be used extensively while other items may not be used at all.

COMPANY NAME: \_\_\_\_\_

**STORMWATER ASSESSMENT PROGRAM BID SCHEDULE  
FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION OF BID.**

Gwinnett County requires pricing to remain firm for the duration of the initial term of the contract. Failure to hold firm pricing for the initial term of the contract will be sufficient cause for Gwinnett County to declare bid non-responsive. Contract to begin January 1, 2021 or upon award, whichever date is later.

Unless otherwise noted, quoted prices will remain firm for four (4) additional one (1) year periods.

- If a percentage decrease will be a part of this quote, please note this in the space provided together with an explanation.

1<sup>st</sup> Renewal Period \_\_\_\_\_

2<sup>nd</sup> Renewal Period \_\_\_\_\_

3<sup>rd</sup> Renewal Period \_\_\_\_\_

4<sup>th</sup> Renewal Period \_\_\_\_\_

- If a percentage increase will be a part of this quote, please note this in the space provided together with an explanation.

1<sup>st</sup> Renewal Period \_\_\_\_\_

2<sup>nd</sup> Renewal Period \_\_\_\_\_

3<sup>rd</sup> Renewal Period \_\_\_\_\_

4<sup>th</sup> Renewal Period \_\_\_\_\_

Certification of Non-Collusion in Bid Preparation \_\_\_\_\_  
Signature Date

**In compliance with the attached specifications, the undersigned offers and agrees, if this quote is accepted by the Board of Commissioners within ninety (90) days of the date of quote opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the quote schedule. By submission of this bid, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the [Electronic Payment](#) information in the instructions to bidders.**

Legal Business Name \_\_\_\_\_

Federal Tax ID \_\_\_\_\_

Complete Address \_\_\_\_\_

Does your company currently have a location within Gwinnett County? Yes  No

Representative Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Telephone Number \_\_\_\_\_ E-mail address \_\_\_\_\_

## SECTION SWR 1 - STORM WATER SYSTEM TELEVISION INSPECTION FOR CONDITION ASSESSMENT

### PART 1 - GENERAL

#### 1.1 WORK THIS SECTION

The work of this section is to determine the internal physical condition of the storm pipe, locate physical defects, determine location of buried structures, and locate possible sources of infiltration and inflow.

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards
  - NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Storm Water Systems Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the System Specifications
  - 1. Section SWR 2, Pipe Cleaning
  - 2. Section SWR 4, Project Site Cleanup

#### 1.3 DEFINITIONS

- A. Television Inspection: Operation necessary to complete a true-color audio-visual inspection for verification of existing internal pipe conditions including pipe materials, pipe grade, connections, cracks, leaking joints, seepage, and roots. The Contractor shall furnish all labor, materials, equipment, tools, and other incidental services for closed circuit television inspection (CCTV).
- B. External Hard Drive: For the purposes of this specification, an external hard drive is a peripheral auxiliary device that connects to the computer via a high-speed interface cable. The interface cable allows the external hard drive to communicate with the computer so that data may be passed back and forth. The most common types of interfaces are USB. The Contractor will deliver all inspection databases, digital reports, and media to the County on an external hard drive that is compatible with the Contract manager's desktop system.

#### 1.4 EXPERIENCE –(See Part. 3.0 of Bid Document for Bid Requirements)

Television technicians shall have minimum of (3) years of experience in performing television/sonar inspections and must be trained and currently certified in the use of NASSCO's Pipeline Assessment and Certification Program (PACP).

#### 1.5 MEASUREMENT AND PAYMENT

- A. Data Collection Methods: Electronic data must be delivered in the prescribed method for uploading to DWR's Maintenance Management System (MMS). DWR reserves the right to upgrade or change the MMS. No separate payment will be made for these types of upgrades. However, the Contractor may use whatever method he chooses to collect the data. Electronic copies of blank data tables will be provided to Contractor at the project kickoff meeting.
- B. No separate payment will be made for the training and certification of Contractor personnel for

NASSCO's Pipeline Assessment and Certification Program (PACP).

- C. Payment for pipe television inspection shall be made at the unit price bid. Television inspection shall be measured by linear foot of pipe line from center of the upstream structure to center of the downstream structure. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work. Payment for television inspection shall be made under Inspection Services, Television Inspection, Pipe Diameter (size), per linear foot.
- D. The Contractor shall allow in the rates and provide at no additional cost, a vehicle when required by the County, together with a driver, to assist with visual reconnaissance surveys and/or inspections. The vehicle shall be suitable for carrying the survey team and laborers and shall be equipped with the following:
  - 1. Equipment for easing and lifting structure covers.
  - 2. Pipe safety equipment.
  - 3. Road safety/traffic control equipment.
  - 4. Protective clothing for the survey/inspection teams comprising coveralls, boots, gloves, hard hats, etc.
- E. Payment for services shall not disburse until deliverables have been reviewed and approved by DWR's Contract manager.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. The Contractor shall furnish the mobile television/sonar inspection studio, television camera, audio-visual digital encoding equipment / software, and other necessary equipment, materials, power, labor, and technicians as needed to perform the television inspection.
- B. The television inspection equipment shall be capable of inspecting a minimum of 1,500 feet of pipe, when entry into the line can be accessed from the upstream and downstream structure. When entry is at one end only, the inspection equipment shall be capable of inspecting seven hundred and fifty (750) feet by a self-propelled unit. The inspection equipment shall be capable of clearly televising the interior of a 12-inch and larger diameter pipes.
- C. The television equipment shall be transported in a stable condition through the pipeline under inspection. Throughout the inspection, the camera equipment shall be positioned with the camera directed along the longitudinal axis of the pipe. When the television equipment is towed by winch and bond through the pipe line, all winches shall be stable with either locking or ratcheting drums. All winches shall be inherently stable under loaded conditions. The bonds shall be steel or of an equally non-elastic material to ensure the smooth and steady progress of the camera equipment. The bonds shall be oriented in such a manner as to enable unhindered extension or retraction through the line. All effort shall be made to prevent damage to the pipe during the television inspection. In the case where damage is caused by the Contractor, for any reason, such as would be caused by incorrect deployment of bonds or retrieval of lodged equipment, the cost of repair or remedy shall be borne by the Contractor.
- D. The studio shall be of sufficient size to accommodate four people for the purpose of viewing the television monitor while the inspection is in progress. The studio shall be insulated against noise and extremes in temperature and shall be provided with means of controlling external and internal sources of light in a manner capable of ensuring that the monitor screen display

is in accordance with the requirements of these Specifications. The County or its representative shall have access to view the television at all times. The central control panel and television camera and sonar control shall be located in the studio. The studio shall be mounted on a mobile vehicle (truck or trailer), which allows safe and orderly movement of the inspection equipment throughout the job site. The studio is not required for off-road assignments.

- E. The television camera used for the pipe line inspection shall be one specifically designed and constructed for stormwater pipeline inspection. The camera shall be waterproof and shall be operative in any conditions that may be encountered in the inspection environment. The Contractor shall provide a color pan and tilt camera to facilitate the inspection of storm pipes and structure defects. The television camera shall be capable of 360° rotational scan indicating any salient defects. The tilt arc must not be less than 225° unless otherwise approved by the County. The adjustment of focus and iris shall provide a minimum focal range of 3 inches in front of the camera's lens. The distance along the pipe in focus from the initial point of observation shall be a minimum of twice the vertical height of the pipe. The illumination must be such as to allow an even distribution of the light around the perimeter without the loss of contrast, flare out of picture, or shadowing. The view seen by the television camera shall be transmitted to a monitor of not less than 11 inches in size. The television camera shall be capable of receiving and transmitting a picture having not less than a resolution of 500 lines. The travel speed of the television inspection camera (through the pipe) shall be uniform and shall not exceed the maximum speed directed by the County of 30 feet per minute.
- F. The Contractor shall test the television inspection equipment to verify the picture quality. The Marconi Regulation Chart No. 1 or the equipment manufacturer's recommendation shall be used to clearly differentiate between the following colors: white, yellow, cyan, green, magenta, red, blue, and black.
- G. The television inspection equipment shall be of such quality as to enable the following to be achieved:
  - 1. Color: With the monitor adjusted for correct saturation, the six colors plus black and white shall be clearly resolved with the primary and complementary colors in order of decreasing luminance.
  - 2. Linearity: The background grid shall show squares of equal size, without convergence/divergence over the whole of picture. The center circle shall appear round and have the correct height/width relationship (+/-5%)
  - 3. Resolution: The live picture must be displayed on a digital capable of providing a clear, color, stable image free of electrical interference with a minimum resolution of not less than 500 lines.
  - 4. Color Consistency: To ensure that the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the survey. In order to ensure color consistency no variation in illumination shall take place during the inspection.
- H. The County may periodically check both the live and video picture color consistency against the calibration charts. Any differences will necessitate re-survey of the new length or lengths affected at the Contractor's expense.
- I. The closed circuit television monitor display shall incorporate an automatically updated record in feet and tenths of a foot of the distance along the line from the cable calibration point to the center point of the camera or center point of the transducer, whichever unit is being used. The

relative positions of the two center points should also be noted. The Contractor shall use a suitable metering device that enables the cable length to be accurately measured; this shall be accurate to +/-1% or 6 inches whichever is greater. The Contractor shall calibrate the footage meter on a regular basis and demonstrate that the tolerance is being achieved by tape measurement between structures on the surface. This taped measurement must be included on a quality control form which will be completed and submitted by the Contractor depicting the level of accuracy achieved.

- J. If the Contractor fails to meet the required standard of accuracy, the County will instruct the Contractor to provide a new device to measure the footage. The County may at their discretion instruct the Contractor in writing, to re-survey those lengths of pipe first inspected with the original measuring device at no additional expense to the County.
- K. All audio-visual recordings and collected data made during the television inspection shall become the property of the County and shall be submitted to the County immediately upon completion of the television inspection.

### PART 3 - EXECUTION OF WORK

#### 3.1 GENERAL

- A. Television Inspection: The Contractor shall inspect pipelines with pan and tilt conventional television imagery as specified so as to record all relevant features and defects of the pipeline under inspection. Inspection of pipelines shall be carried out utilizing the County approved formats only. Cleaning shall be performed in accordance with the requirements of Section SWR 2, Pipeline System Cleaning. Pipes should be sufficiently clean so as to allow for clear viewing of all of the interior surfaces of the lines during television inspection. A PACP certified technician or supervisor shall control operation of television equipment and coding of inspection. Should the Contractor utilize any personnel that is not PACP certified to actually document the inspection results, those inspections shall be refused and a re-survey shall be completely at the Contractor's expense.
  - 1. Inspections shall be documented using NASSCO's Pipeline Assessment and Certification Program (PACP).
  - 2. If a television inspection of an entire section cannot be successfully performed from one structure, a reverse setup shall be performed to obtain a complete inspection. REVERSE SETUPS shall be considered as subsidiary to the unit price bid for CCTV inspection. The objective of this project is to inspect the maximum amount of the storm water systems and it is likely that a number of reverse set-ups will be required in order to maximize the pipeline footage inspected.
  - 3. Each pipe length, i.e. the length of pipe between two consecutive structures, shall be entered on separate work order headers electronically. Thus where a Contractor elects to "pull through" a structure during a CCTV, a new coding sheet shall be started at the structure "pulled or walked through" and the footage re-set to zero on the coding sheet. Where a length of pipe between consecutive structures is surveyed from each end (due to an obstruction or structural failure) two coding sheets should be used. Where a length of pipe between two consecutive structures cannot be surveyed or attempted for practical reasons a (complete header) coded sheet shall be made out defining the reason for abandonment. At the start of each pipe length being surveyed or inspected and each reverse set-up, the length of pipeline from zero footage, the entrance to the pipe, up to the cable calibration point shall be

recorded and reported in order to obtain a full record of the pipe length. All reverse set-ups, blind structures, and buried structures shall be logged on a separate log. Video digits shall be recorded so that every recorded feature has a correct elapsed time stamp and footage. Each log shall make reference to the start upstream structure and finish downstream structure unless abandonment took place because of blockage. Structure Facility ID numbers shall be indicated in the remarks column of the detail report. Only the field "Direction of Inspection" and the order of the start and finish structures as listed on the observations section of the inspection will be utilized to indicate reverse setups.

4. The Contractor shall provide a complete television inspection of both the upstream and downstream structures beginning at the top of each structure and panning down to inspect the entire structure. Contactor shall also stop and pan each service lateral as standard procedure.
5. Whenever prevailing conditions allow, the camera head shall be positioned to reduce the risk of picture distortion. In circular pipes, the camera lens shall be positioned centrally (i.e. in prime position) within the pipe. In non-circular pipes, picture orientation shall be taken at mid-height, unless otherwise agreed, and centered horizontally. In all instances the camera lens shall be directed along the longitudinal axis of the pipe when in prime position. A positioning tolerance of  $\pm 10\%$  of the vertical pipe dimension shall be allowed when the camera is in prime position.
6. All television inspections shall be performed during low flow conditions. The County reserves right to refuse any television inspection that does not produce an effective survey of the pipe because of high flow conditions or for any other reason.
7. Each survey/inspection unit shall have on call equipment available to carry out the flushing, rodding, and jetting of pipes as and when such procedures are deemed to be necessary.

**B. DIGITAL AUDIO VISUAL RECORDING**

1. Video Recording: Continuous digital video recordings of the inspection view as it appears on the television monitor shall be taken. The recording shall also be used as a permanent record of defects. The recording shall be a compressed MP4 format. The digital video encoding shall include both sound and video information that can be reproduced with a video image equal or very close to the quality of the original picture on the television monitor. The replay of the recorded video information, when reviewed by a compliant viewer, shall be free of electrical interference and shall produce a clear, stable image. The audio portion of the composite digital coding shall be sufficiently free of electrical interference and background noise to produce an oral report that is clear and complete and easily discernible.
2. The audio portion of the inspection report shall include the location or identification of the upstream structure number to the downstream structure number, the direction of travel, the Pipe Facility ID being inspected, and the distance traveled on the specific run encountered. The inspection camera/sonar equipment shall be continuously connected to the monitoring equipment.
3. The recording and monitoring equipment shall have the built-in capability to allow the County to instantly review both the audio and video quality of the recordings at all times during the inspection. The size and position of the data display shall be such as not to interfere with the main subject of the picture.



4. Once the survey of the pipeline is under way, the following minimum information shall be continually displayed:
  - a. Automatic update of the camera's footage position in the line from adjusted zero
  - b. Pipe dimensions
  - c. Upstream Structure Number
  - d. Downstream Structure Number
  - e. Facility ID of Pipe being surveyed
  - f. Date of survey
  - g. Road name/location
  - h. Direction of survey
  - i. Time of start of survey
  - j. Material of construction of the pipe
5. Separate MP4 files shall be created for each pipe. In case of a reverse setup, such inspection shall be stored in a separate inspection record and MP4 file. MP4 files shall be written to External Hard Drive media for delivery to the County.
6. Footage and corresponding time elapsed shall be logged throughout survey/inspection for all relevant defects and construction features encountered unless otherwise agreed.
7. MP4 files shall be named according to the following file specification:  
  
STMTV\_[UPSTREAMMANHOLEID]\_[DOWNSTREAMMANHOLEID]\_[PIPEID]\_[Contractor Unique ID]\_[MMDDYYYY]\_[IncrementalNumber]
  - a. The incremental number shall be used if multiple inspections are performed for the same line, such as a reverse inspection setup.
  - b. Facility ID numbers will be provided to the Contractor by the County in a personal geodatabase or shape files.
8. DWR, at its sole discretion, reserves the right to refuse any MP4, on the basis of poor image quality, excessive bit rates, inconsistent frame rates or any other characteristics that may affect usability by the County.
9. All continuous defects shall incorporate a start and finish abbreviation in the inspection.
10. All data submittals will be in a single PACP version 6.2 or newer database. All inspections shall be contained within one database.
11. All data submittals shall also contain a directory of all inspections and the corresponding Segment Grade and Quick rating Scores for Structural, Operation and Maintenance, and Overall.

C. TELEVISION INSPECTION REPORTS

1. The Contractor shall complete a television inspection report for each pipeline segment. These reports shall be per the format and defect codes of NASSCO's Pipeline Assessment and Certification Program (PACP) including the Scoring for Structural, Operation and Maintenance and Overall. Prior to beginning work, the Contractor shall submit a hardcopy sample of the television inspection report to the County for approval. All reports shall be

exported in electronic format and delivered with the monthly invoice, database and media submittal.

2. In addition to recording the defects for the pipes and structures, the Contractor shall also record attribute data as work order header fields in their inspections. Attachment A defines each of the proper NASSCO PACP and Gwinnett County assigned field usage.

### 3.2 DATA QUALITY CONTROL PROCEDURES

- A. The data submissions shall undergo a review for quality when submitted to the County. Each data field within the chosen 10% of inspections submitted will be reviewed for accuracy by PACP certified County staff. Should accuracy levels fall below 90%, the data submittal will be refused and no payment will be released. The Contractor will be required to correct or re-do inspections until 90% level of accuracy is reached. Continuous data submittal refusals for quality under 90% will constitute cause for dismissal.
- B. It is recommended that the Contractor employ similar QA/QC checks in order to verify accuracy on submissions prior to sending them to the County to avoid continuous data submittal refusals and subsequent dismissal.

### 3.3 EMERGENCY TV JOBS

The County will occasionally assign time sensitive TV jobs to the Contractor. These shall be inspected, processed, and submitted within 5 business days of assignment. In addition to the TV charge, a surcharge will be paid under the line item "Emergency TV Surcharge" for each pipe assigned for Emergency TV inspection.

### 3.4 TURN AROUND TIME

Regular TV deliverables shall be submitted within 2 months of assignment.

**\*\*END OF SECTION\*\***

## SECTION SWR 2 - STORM LINE CLEANING

### PART 1 - GENERAL

#### 1.1 WORK THIS SECTION

Storm line cleaning to remove foreign materials and debris from the mains and restore the pipe to a minimum of 95% of the though flow channel and cross section, for clear viewing of the interior surfaces of the lines during television inspection, or as required for other specified rehabilitation.

#### 1.2 REFERENCES

##### A. Codes, Specifications, and Standards

NASSCO – National Association of Sewer Service Companies

##### B. Testing and Materials Standards (None Cited)

##### C. Specifications for Construction of Storm Water Systems, Gwinnett County Department of Water Resources

##### D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County

##### E. Related sections of the System Specifications

1. Section SWR 1, SWR 1\_Storm Television Inspection
2. Section SWR 2, SWR 2\_Storm Line Cleaning
3. Section SWR 3, SWR 3\_Pipeline Condition Assessment
4. Section SWR 4, SWR 4\_Project Site Cleanup

#### 1.3 DEFINITIONS (None Cited)

#### 1.4 EXPERIENCE –(SEE SECT. 3.0 OF BID DOCUMENT FOR BID REQUIREMENTS)

Field personnel conducting cleaning shall have a minimum of (3) of experience performing such activities. The Contractor shall not employ any cleaning procedure or utilize any equipment with which the Contractor's personnel do not have the above stated minimum experience.

#### 1.5 MEASUREMENT AND PAYMENT

A. Payment for cleaning shall be made at the unit price bid. Storm water pipe cleaning shall be measured by linear foot of pipe from center of the upstream structure to center of the downstream structure. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work. Payment for pipe cleaning shall be made under Storm Pipe Cleaning, Light, Heavy or Specialty Cleaning, Pipe Diameter (size) per linear foot.

B. Payment for services shall not disburse until deliverables have been reviewed and approved by DWR's Contract manager. Only cleaning jobs which meet the requisite before and after conditions may be billed.

### PART 2- PRODUCT

#### 2.1 GENERAL

A. The Contractor shall provide all labor, material, supplies, equipment, transportation, traffic control, etc., necessary to satisfactorily clean the Pipe(s).

B. Hydraulically Propelled Equipment: The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the

cleaning operation to protect against flooding of the pipe. The movable dam shall be equal in diameter to the main being cleaned. If cleaning balls or other equipment, which cannot be collapsed, are used, special precautions to prevent flooding of the pipes and public or private property shall be taken.

- C. High-Velocity Jet (Hydrocleaning) Equipment: All high-velocity cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size mains designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring structure walls and floor and produce at least 2000-psi pressure. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel.
- D. Mechanically Powered Equipment: Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the main will not be allowed. A power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 750 feet of rod. The rod shall be specifically heat-treated steel. To ensure safe operation, the machine shall be fully enclosed and have an automatic safety clutch or relief valve.
- E. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. The County will supply a meter to the Contractor that must be connected to the fire hydrants prior to the withdrawal of water to document all water usage by the Contractor. The Contractor will be required to record daily meter readings at the beginning and ending of each workday and provide these readings to the County representative with each pay request. The Contractor will not be charged any fees for the use of the meter nor for any water used in the execution of this work unless otherwise indicated. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant. No additional payment to the Contractor shall be required use of the meter or the documentation of water used. The Contractor shall be responsible for providing all other necessary hoses and tools for obtaining the water.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Cleaning Precautions: During cleaning operations, satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the storm drain line are used, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of public or private property being served by the pipe.
- B. Cleaning: The designated structure sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. Selection of the equipment used shall be based on the conditions of pipes at the time the work commences. The equipment and methods selected shall be satisfactory to the County. The equipment shall be capable of cleaning a minimum of 600' linear feet and of removing dirt, grease, rocks, sand, and other materials and obstructions from the pipes and structures. If cleaning of an entire section cannot be successfully performed from one structure, the equipment shall be set up on the other structure and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire structure section, it will be assumed that a major blockage exists and the cleaning effort shall be repeated with other types of equipment.

- C. The term "clean" as used herein shall mean the complete removal of all garbage, dirt, gravel, rocks, roots, grease, settled sludge, and all other solid or semi-solid materials from the pipes and structures.
1. Light Cleaning is defined as cleaning of a pipe that has an average depth of foreign material and debris equal to no more than 25% of the diameter of the main over the length of the structure-to-structure section. Rocks should be smaller than 3" in diameter. Light cleaning shall only be performed as necessary for TV inspection of assigned pipes unless otherwise specified by DWR.
  2. Heavy Cleaning is defined as cleaning of a pipe that has an average depth of foreign material and debris equal to more than 25% of the diameter of the main over the length of the structure-to-structure section. Rocks should be larger than 3" in diameter. If a pipe is encountered which requires heavy cleaning, the Contractor shall notify the County of the problem before commencing work.
  3. As part of both Light and Heavy Cleaning, the Contractor shall scour debris or grease-laden structure walls with high velocity water gun. No additional cost will be paid for such scour.
  4. Specialty Cleaning is defined as cleaning of a pipe that has heavy accumulation of roots and/or heavy accumulation of grease, large diameter rocks and/or debris and requires the use of bucketing and/or rodding methodologies to clean.
- D. Whenever mains to be cleaned show evidence of being more than one-half filled with solids, bucket machines and/or rodding machines shall be utilized to remove the major portion of the material before hydraulic equipment or high velocity, hydro-cleaning equipment is brought into use for finishing the cleaning work.
1. When bucket machines are used, the bucketing process shall be done in one main section at a time. A bucket of the proper size shall be placed into the downstream structure and pulled, in intervals, towards the upstream structure.
  2. The bucket shall be retrieved and emptied at varying intervals depending upon the amount of materials being removed. When a bucket is retrieved and it is completely full or overflowing with materials, then the length of travel into the main shall be reduced to ensure total removal of debris. This process shall be repeated until the bucket has been pulled through the entire main section. Upon completion of the bucketing or rodding operation, hydraulically propelled cleaning equipment or high velocity hydro-cleaning equipment shall be used to complete the cleaning work.
    - a. Root Removal: Roots shall be removed from sections designated to be relined. Special attention shall be used during the cleaning operation to assure complete removal of roots from the joints. Procedures may include the use of mechanical equipment such as rodding machines, bucket machines and winches using root cutters and porcupines, and equipment such as high-velocity jet cleaners.
    - b. Material Removal: All sludge, dirt, sand, rocks, grease, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream structure of the section being cleaned. Passing material from structure section to structure section, which could cause main stoppages, accumulations of sand in wet wells, or damage pumping equipment, shall not be permitted.

- c. Disposal of Materials: All solids, semisolids and/or liquids resulting from the cleaning operations shall be removed from the work site and disposed of at a site approved to accept wastewater debris and liquids. All materials shall be removed from the site no less often than at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as approved by the County. UNDER NO CIRCUMSTANCES SHALL DEBRIS AND/OR LIQUIDS REMOVED THEREFROM BE DUMPED INTO THE GROUND OR STREETS OR INTO DITCHES, CATCH BASINS, OR STORM DRAINS FOR ANY LENGTH OF TIME. Contractor shall be responsible for all disposal costs.
- d. Final Acceptance: Acceptance of pipe cleaning shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the County. If the inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to reclean and reinspect the pipe, at no additional cost to the County, until the cleaning is shown to be satisfactory.

### 3.2 CLEANING PRECAUTIONS

- A. Bucket machines or rodding machines shall be used very carefully because of their tendency to "hang-up" on or "wedge against" the pipe and break it. Only experienced and well-trained operators shall operate the machines(s).
- B. Whenever hydraulically propelled cleaning tools, or high velocity, hydro-cleaning equipment (which depends upon water pressure to provide their cleaning force) or any tools which retard the flow of water in the sewer mains are used, precautions shall be taken to ensure that the water pressure so created does not cause any damage or flooding to public or private property being served by the main section involved.
- C. Any damage to the pipes caused by the Contractor's operations shall be repaired in a manner approved by the County at the Contractor's expense. The County reserves the right to make said repairs itself and charge the Contractor accordingly.
- D. Damage due to flooding of any public or private property being served by any main section which is over- filled by Contractor's cleaning operations shall also be repaired or otherwise paid for by the Contractor.

### 3.3 DOCUMENTATION

The Contractor shall keep records (in a log-type form) of the work accomplished in the cleaning of the pipes. With each pay request, digital backup documentation in the form of before and after pictures and/or video is required. The following information shall be required as a minimum:

1. Location (street address) and type of surface cover.
2. Structure ID Number to Structure ID Number.
3. Pipe ID Number
4. Date and Time.
5. Length of Pipe.
6. Condition and depth of structures
7. Size and type of conduit.
8. Type and condition of structure
9. Type of cleaning performed and various types of equipment used.
10. Meter readings (fire hydrant use).
11. Remarks as to type of materials removed, amount of materials removed, and number of hours spent on each pipe section.

**\*\*END OF SECTION\*\***

## **SECTION SWR 3 – STORM POLE CAMERA INSPECTION FOR CONDITION ASSESSMENT**

### **PART 1 - GENERAL**

#### 1.1 WORK THIS SECTION

The purpose of Pipeline Condition Assessment is to locate a structure, document all incoming and outgoing pipes, and condition and attributes of all associated pipes. NASSCO's PACP condition assessment codes will be utilized. Along with this work the Contractor is required to inspect each structure and associated pipe for potential illicit discharges and or illegal connections (IDIC). If an IDIC is found, it must be reported to the County immediately and documented in form. IDIC Inspections shall be performed for MACP Level 1 Surface Inspections and Level 2 Lamping / Condition Assessment Inspections.

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards  
NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specification for Construction of Storm Water Systems, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the Storm System Rehabilitation Specifications
  1. Section SWR 1, SWR 1\_Storm Television-Sonar Inspection
  2. Section SWR 2, SWR 2\_Storm Line Cleaning
  3. Section SWR 3, SWR 3\_Pipeline Condition Assessment
  4. Section SWR 4, SWR 4\_Project Site Cleanup

#### 1.3 DEFINITIONS

- A. Structure Types
  1. Catch Basins: Located in streets or parking lots and designed to intake runoff. Shapes include Left Wing, Right Wing, Double Wing, Hooded Grate, and Combination.
  2. Yard Inlets: Located where storm lines intersect and designed to intake runoff. Shapes include grated inlet and raised top.
  3. Headwalls: Located at the end of pipe systems and designed to either discharge or intake runoff. Shapes include Plain End, Winged, Straight, and Flared End.
  4. Junction Boxes: Located where storm lines intersect and do not intake water. Inlet shapes include Round, Rectangular, and Buried.
- B. Inspection Types
  1. Surface Inspection: Paid inspection conducted when structure is accessible for inside visible inspection or a topside inspection when accessing the inside of the structure is not possible due to landscaping or other prohibitive factors.
  2. Lamping Inspection: Paid inspection conducted with a pole camera and zoom features of all pipes associated with structure. Lamping inspections are expected on all accessible assigned structures and associated pipes. Payment is on a per structure basis regardless of how many pipes are associated with the structure.
  3. Cannot Open (CNO): Paid inspection conducted when a structure lid or grate cannot be moved with reasonable force by hand.

4. Internal: Paid inspection conducted using man entry into a structure. No person shall enter a confined space without certified training and one year experience.
5. Buried: Unpaid inspection. Structure is not visible at ground surface. All buried structures on the storm systems shall be reported following their location. A geoshapefile of known buried structures will be provided by the County to the Contractor, and known buried structures will not be reported or inspected. Buried structures may be assigned for TV inspection at the discretion of DWR.
6. No Access: Unpaid non-inspection. Structure cannot be accessed due to fence or other obstruction. The Contractor will select "No Access" as the inspection type.
7. Does Not Exist (DNE): Unpaid non-inspection. Structure has been removed. The Contractor will select "DNE" as the inspection type.
8. Not Found: Unpaid non-inspection. Structure cannot be located by Contractor. The contractor will select "Not Found" as the inspection type.

1.4 EXPERIENCE– (See Sect. 3.0 of Bid Document for Bid Requirements)

- A. All field personnel assessing the condition of the pipes shall have received PACP certification, proper training in this function and have a minimum of (3) years of experience in performing television/zoom camera inspections including safe working practices, proper assignment of NASSCO's condition assessment codes, etc.
- B. All office personnel reviewing inspections and assigning PACP scores shall have received PACP certification and proper training in this function.

1.5 MEASUREMENT AND PAYMENT

- A. Payment for MACP Level 1 inspections shall be made at the individual unit price bid. MACP Level 1 inspection shall be per each manhole / Structure inspected and requires digital pictures taken top side and or inside the Manhole / structure. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SWR. Payment for Manhole Condition Assessment Level 1 shall be made under Inspection Services, Structure Inspection (Level 1) per each.
- B. Payment for MACP/PACP Level 2 inspections shall be made at the individual unit price bid. MACP/PACP Level 2 inspection shall be per each manhole / Structure inspected and requires digital video taken of inside of each conduit associated with manhole / Structure. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SWR. Payment for Manhole Condition Assessment Level 2 shall be made under Inspection Services, Zoom Camera Manhole Inspection (Level 2) per each.
- C. Payment for services shall not disburse until deliverables have been reviewed and approved by DWR's Contract manager in accordance with DWR's QA/QC protocol (**section 3.5**).

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. Line lamping shall be performed using a zoom camera capable of illuminating 150' to 250' of 12" to 72" pipe diameters.
- B. The Contractor shall ensure that the zoom camera is centered in the middle of circular pipe lines and structure risers at all times during inspection. Using a steel tape, graduated survey



rod, or laser tape, the structure depths are to be measured from the invert to the structure frame to the nearest .10 inch.

- C. Zoom camera Line-Lamping inspections will be completed using a self-portable zoom camera inspection unit conforming to the following criteria:
  - 1. Multi-directional closed-circuit television zoom camera inspection and lighting system;
  - 2. Wide angled lens structure camera and lighting system for structure wall inspections;
- D. Zoom camera inspection unit must use a waterproof, pan and tilt color camera, capable of entering into a minimum structure cover size of 12 inches and including lighting, cables, a power source, and other related equipment.
- E. The camera shall be equipped with an optic telephoto lens with sufficient magnification that the effects of pixelation do not degrade the farthest image.
- F. The light source will be adjustable to allow an even distribution of light around the pipe and structure perimeter without loss of contrast, flare out of picture, or shadowing.
- G. The telescopic boom must be capable of lowering the camera to a depth of at least 25 ft inside the structure.
- H. It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must provide all equipment required to comply with the regulations and guidelines.
- I. The Contractor shall provide all labor, material, supplies, equipment, transportation, traffic control, etc. necessary to complete the pipeline condition assessments.

### 3.1 GENERAL

- A. Structures to be assessed:
  - 1. The Contractor shall identify all designated structures on the storm water systems to be assessed and ensure that the structure referencing system is to be used throughout the survey and for all subsequent reporting. The Contractor shall inspect and record both mapped and unmapped structures as well as buried and unburied structures in addition to designated structures.
  - 2. The visible portion of each pipe entering designated structure shall also be inspected, when accessible, to assess overall condition and possible forms of infiltration.
  - 3. For structures and pipes without a pre-assigned facility ID number, the contractor shall assign a temporary unique identifier number from a series assigned by the County.
  - 4. When a broken or missing structure cover is identified, the Contractor will replace the cover and advise the County in writing of the location of such broken cover.
  - 5. Inspection data shall be submitted to the county following the format laid out in the ProactiveLampingInspection.accdb Digital data, and lamping videos will be delivered to the County on external hard drives.
  - 6. Digital videos shall be named in the following format: Stmlmp\_structure\_facility ID\_ContractorUniqueID\_Date\_IncrementalNumber

### PART 3 - EXECUTION

- B. Ground Level – structure assessment procedures:
  - 1. Structures less than 20 feet deep, with all mains less than 48 inches in diameter, will be inspected from the ground level without entry into the structure.
  - 2. The structure interior structure shall be manually inspected using high-level illumination. High- resolution digital videos with approved picture quality shall be taken of observed defects as well as all other relevant features. Information gathered shall provide a full illustration of the condition of the structure's interior as well as each main entering or leaving the structure

3. The Contractor shall take digital videos as described in this section, complete the assessment report, and record map corrections as necessary.
4. Man Entry – manhole assessment procedures: This procedure will be utilized at the discretion of the County Contract Manager, the Contractor must seek approval from County Contract Manager before entry of manholes that have not been preselected for Man Entry. No additional payment will be made for Man Entry. Structures that are 20 feet deep and greater will be inspected using the man entry condition assessment method. Also, structures with any main 48 inches in diameter and greater or with offset structures, overflow weirs, or other unique features precluding effective ground level assessment will be inspected using this method.
5. The structure interior structure shall be manually inspected using high-level illumination. High- resolution digital videos with approved picture quality shall be taken of observed defects as well as all other relevant features. Information gathered shall provide a full illustration of the condition of the structure’s interior as well as each main entering or leaving the structure.
6. Confined Space safety procedures must be employed.
7. The Contractor shall take digital photos as described in this section, complete the assessment report, make map verifications, and record map corrections as necessary.

### 3.2 DOCUMENTATION

The following data will be recorded by the Contractor and submitted in the form of electronic data (**see SWR-3 section 3.4**), including all text, updated maps and digital videos. Submitted data shall incorporate the following fields:

**STORMWATER STRUCTURE INSPECTION FORM**

STRUCTURE FACILITY ID#: \_\_\_\_\_ DATE \_\_\_\_/\_\_\_\_/\_\_\_\_ : \_\_\_\_AM/PM INSPECTION CREW: \_\_\_\_\_

DRAINAGE BASIN: \_\_\_\_\_ OWNER \_\_\_\_\_

- 1. STATUS..... [ ] 1-ACTIVE 2-ABANDONED 3-REMOVED 4-NOT FOUND 5-BURIED
- 2. PURPOSE..... [ ] 1- CA-INTERNAL CONDITION ASSESSMENT 2- MR-INTERNAL MAINTENANCE RELATED  
3- PR- INTERNAL PRE-REHAB SURVEY 4- PO- INTERNAL POST-REHAB SURVEY  
5- CA- EXTERNAL CONDITION ASSESSMENT 6- MR- EXTERNAL MAINTENANCE RELATED  
7- PR- EXTERNAL PRE-REHAB SURVEY 8- PO- EXTERNAL POST-REHAB SURVEY 9- NOT KNOWN
- 3. STRUCTURE TYPE..... [ ] 1- CATCH BASIN 2- JUNCTION BOX 3- HEADWALL 4-YARD INLET 5-TRENCH DRAIN 6-STANDPIPE 7-FLUME 8-WEIR  
9- OTHER 10- DITCH INTERSECTION
- 4. LOCATION ..... [ ] 1-MAIN HWY (URBAN) 2-MAIN HIGHWAY(SUBURBAN) 3-LIGHT HIGHWAY 4-EASEMENT/RIGHT OF WAY 5-WOODS  
6-SIDEWALK 7-PARKING LOT 8-ALLEY 9-YARD 10- OTHER 11-DITCH 12- BUILDING 13- CREEK 14- RAILWAY  
15- AIRPORT 16- PRIVATE
- 5. SURFACE TYPE..... [ ] 1-ASPHALT 2-CONCRETE 3-GRAVEL 4-DIRT/GRASS 5-OTHER
- 6. COVER TYPE..... [ ] 0-N/A 1-SOLID (TRAFFIC) 2-VENTED (NON-TRAFFIC) 3- SOLID (PLASTIC) 4-GRATED 5-OTHER 6-SOLID (NON-TRAFFIC)
- 7. COVER FIT..... [ ] 0-N/A 1-GOOD 2-TIGHT 3-LOOSE 4-ROCKING 5-MISSING
- 8. ADDRESS: \_\_\_\_\_
- 9. CROSS STREET: \_\_\_\_\_
- 10. INLET SHAPE..... [ ] 1-LEFT WING 2-RIGHT WING 3-DOUBLE WING 4-HOODED GRATE 5-GRATED INLET  
6-COMBINATION 7-ROUND 8-PLAIN END 9-GRATED 10-RECTANGULAR 11-FLARED END 12-RAISED  
13-BURIED 14-BROAD CREST 15-ORIFICE 16-OTHER 17-STRAIGHT 18-TRAPEZOID 19-V-NOTCH 20-WINGED
- 11. WALL MATERIAL..... [ ] 0-N/A 1-CONCRETE-POURED 2-CONCRETE-SECTIONED 3- PRE-CAST HEADWALL 4-BRICK 5-OTHER
- 12. STRUCTURE DEPTH (FT)..... [ ] (RING TO INVERT OF STRUCTURE)
- 13. WALL DIAMETER WIDTH (FT) [ ] (WALL-TO-WALL AT BASE OF STRUCTURE)
- 14. WALL DIAMETER LENGTH (FT) [ ] (WALL-TO-WALL AT BASE OF STRUCTURE)
- 15. PONDING DEPTH (IN) ..... [ ]
- 16. # IN CONDUITS..... [ ]
- 17. # OUT CONDUITS..... [ ]
- 18. DISTRICT AND LANDLOT: ..... [ ]
- 19. INSPECTION TYPE..... [ ] 1-INTERNAL 2-SURFACE 3- NOT INSPECTED 4- BURIED 5-NOT FOUND 6- NO ACCESS 7- DNE 8-CNO 9-LAMPING
- 20. PRE-CLEANING..... [ ] 1-NO PRE-CLEANING 2-JETTING 3-HEAVY CLEANING 4-NOT KNOWN
- 21. RING FIT..... [ ] 0-N/A 1-GOOD 2-TIGHT 3-LOOSE 4-ROCKING 5-MISSING
- 22. DEBRIS..... [ ] 0-NONE 1-SILT 2- ROCKS 3-SAND 4-DEBRIS (SYNTHETIC) 5-GRAVEL 6-DEBRIS (ORGANIC) 7-CONSTRUCTION 8-OTHER
- 23. DEBRIS DEPTH..... [ ]
- 24. PIPE SEAL ..... [ ] 0- NONE 1-MORTAR 2-BAND 3-MISSING GROUT 4-OTHER

**DEFECT SUMMARY**

- COVER CONDITION..... [ ] 0-N/A 1-GOOD 2-CRACKED 3-BROKEN 4-COLLAPSED 5- MISSING
- RING CONDITION..... [ ] 0- N/A 1-GOOD 2-CRACKED 3-BROKEN 4-COLLAPSED 5-MISSING
- TOP CONDITION..... [ ] 0-N/A 1-GOOD 2-CRACKED 3-BROKEN 4-COLLAPSED 5-MISSING
- WALL CONDITION..... [ ] 0-N/A 1-GOOD 2-CRACKED 3-FRACTURE 4-BROKEN 5- STRUCTURAL FAILURE
- WALL INFILTRATION..... [ ] 0-N/A 1-STAINING 2-WEEPER 3-DRIPPER/MISSING GROUT 4-RUNNER 5-GUSHER
- SURFACE CONDITION..... [ ] 1-EXCELLENT 2-DEPRESSION 3-CRACKED 4-HOLE-<1FT. DIAMETER 5- HOLE->1FT. DIAMETER
- GEN STRUCTURE CONDITION..... [ ] 0-N/A 1-EXCELLENT 2-GOOD 3-FAIR 4-POOR 5-FAILED

WEATHER..... [ ] 1-DRY 2-HEAVY RAIN 3-LIGHT RAIN 4-SNOW 5-SATURATED 6-DAMP 7-VERY DRY  
COMMENTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**STORMWATER STRUCTURE INSPECTION FORM CONT.**

IDIC Summary

IDIC.....|\_\_\_\_\_| 0-NO 1-YES

COLOR.....|\_\_\_\_\_| 0-NONE 1-CLEAR 2-BROWN 3-BLUE 4-GREEN 5-GRAY 6-BLACK 7-WHITE 8-ORANGE 9-RED 10-YELLOW

ODOR.....|\_\_\_\_\_| 0-NONE 1-SEWAGE 2-SULFIDE 3-RANCID / SOUR 4-PETROLEUM / GAS 5-FRAGRANT 6-999-OTHER

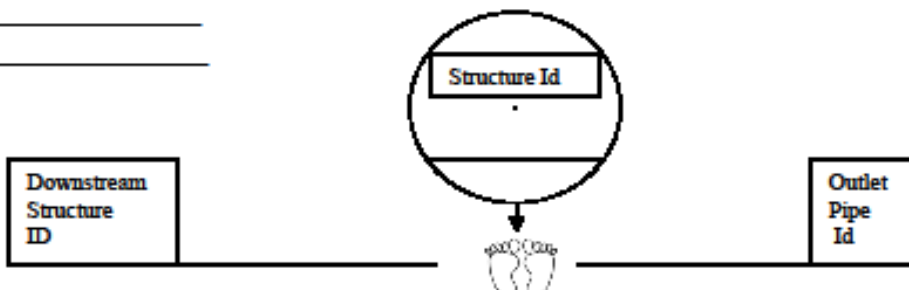
FLOATABLES....|\_\_\_\_\_| 0-NONE 1-SEWAGE 2-PETROLEUM 3-SURFACE SCUM 4-FOAM / SUDS 999-OTHER

**PIPE INSPECTION FORM- POLE CAMERA (LAMPING)**

	(1)	(2)	(3)	(4)	
1. UPSTREAM STRUCTURE ID # .....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	FACILITY ID
2. DOWNSTREAM STRUCTURE ID #..	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	FACILITY ID
3. PIPE #	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	FACILITY ID
4. STRUCTURE INSPECTED FROM ID#:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	FACILITY ID
5. LOCATION.....	<input type="text"/>				1-MAIN HWY (URBAN) 2-MAIN HIGHWAY(SUBURBAN) 3-LIGHT HIGHWAY 4-EASEMENT/RIGHT OF WAY 5-WOODS 6-SIDEWALK 7-PARKING LOT 8. ALLEY 9- YARD 10-OTHER 11-DITCH 12-BUILDING 13-CREEK 14-RAILWAY 15-AIRPORT 16-PRIVATE
6. SURFACE TYPE.....	<input type="text"/>				1-ASPHALT 2-CONCRETE 3-GRAVEL 4-DIRT/GRASS 5-OTHER
7. PIPE SHAPE .....	<input type="text"/>				1-ROUND 2-ELLIPTICAL 3- ARCH 4-BOX CULVERT
8. PIPE MATERIAL.....	<input type="text"/>				1-PLAIN CMP 2-COATED CMP 3-ALUMINIZED STEEL 4- PLASTIC 5-REINFORCED CONCRETE 6-OTHER 7-CAST IRON 8-CLAY 9-PLAIN CONCRETE
9. PIPE DIAMETER/HEIGHT (RISE) (FT)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
10. PIPE DIAMETER/WIDTH (SPAN) (FT)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
11. PIPE LINER MATERIAL .....	<input type="text"/>				0-N/A 1-CIPP 2- ASPHALT 3-CONCRETE PAVED INVERT 4- PAVED INVERT 5-FOLD AND FORM 6-SPIRAL WOUND 7-SEGMENTED PANEL 8-SEGMENTED PIPE 9-CCCP
12. DIR OF INSPECTION .....	<input type="text"/>				1-UPSTREAM TO DOWNSTREAM 2-DOWNSTREAM TO UPSTREAM
13. RIM TO CROWN (FT).....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
14. RIM TO INVERT (FT).....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
15. DEBRIS DEPTH (IN).....	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
16. DEBRIS TYPE .....	<input type="text"/>				0-N/A 1-GILT 2-ROCKS 3-SAND 4-DEBRIS (SYNTHETIC) 5- GRAVEL 6- DEBRIS (ORGANIC) 7-CONSTRUCTION 8-OTHER
17. RECOMMENDED TV.....	<input type="text"/>				0-N/A 1-NO 2-YES (COMMENTS REQUIRED)
18. RECOMMENDED CLEAN?	<input type="text"/>				0-N/A 1-NO 2-YES(COMMENTS REQUIRED)

FAC ID	OBS	RATING	START CLOCK	END CLOCK	VALUE			JOINT	REMARKS	
					S/M/L	INCHES				%
						1 <sup>ST</sup>	2 <sup>ND</sup>			

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### 3.3 VIDEO DOCUMENTATION PROCEDURES

- A. A continuous high-resolution digital color video shall be taken for each structure assessed, showing:
  - 1. Start video with the facility ID and date visible on the structure.
  - 2. Show entire structure and surrounding surface.
  - 3. Show the structure invert and all pipes.
  - 4. Descend into structure recording any structural defects, evidence of I/I, obstructions, debris, mortar loss, etc.
  - 5. The downstream (6 o'clock) pipe shall be inspected first followed by all remaining pipes in a clockwise direction.
- B. The zoom feature shall be utilized to zoom in on all visible defects to accurately identify them. In addition, the zoom feature shall be utilized to the furthest extent possible within the pipe. Each pipe inspection shall be conducted at a pace that is appropriate to identify defects and overall pipe condition.

### 3.4 DELIVERABLES

- A. Electronic databases with inventory and condition data shall be submitted to DWR's Contract manager. The electronic database, using the required file format, shall be tied to the DWR's GIS stormwater maps through the structure facility ID numbers.
- B. Data Collection Methods: Electronic data must be delivered in the prescribed method for uploading to DWR's Maintenance Management System (MMS). DWR reserves the right to upgrade or change the MMS and associated database. No separate payment will be made for these types of upgrades. However, the Contractor may use whatever method he chooses to collect the data. Electronic copies of blank data tables will be provided to Contractor at the Project – Kickoff Meeting and, if there are any changes to the MMS, DWR will provide updated tables as needed.
- C. The Pipeline Condition Assessment form must be delivered in the database provided by DWR in the prescribed format.
- D. Maps showing any temporary facility IDs utilized during inspection and video footage from the zoom cameras shall be included as a portion of the deliverable.

### 3.5 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control program in order to assure accuracy of data prior to submitting a deliverable to the County. This program shall verify accuracy of header, inventory, video, and inspection data. It is recommended that the Contractor institute a program similar in scope to that used by the County.
- B. The data submissions shall undergo review checks for Quality when submitted to the County. 10% of the data shall be audited from each submittal. Should accuracy levels fall below 90%, the data submittal will be refused and no payment will be released. The Contractor will be required to correct or re-do inspections until 90% level of accuracy is reached. Continuous data submittal refusals for quality under 90% will constitute cause for dismissal.

### 3.6 TURN AROUND TIME

Deliverables shall be processed and submitted to the County within 1 month of inspection completion for any given month.

### 3.7 COLLAPSING STRUCTURES AND PIPES

- A. Any structure with severely compromised structural integrity and posing a hazard or threat of personal injury to the public must be reported to the County immediately for remedial action. Written confirmation of the report, including all details of the defect/hazard shall be made to the County within 24 hours of the discovery of the problem.

- B. The Contractor must barricade any structure with conditions that pose a threat of personal injury to the public until the County arrives at the job site.

### 3.8 HOLES AT STRUCTURES

- A. The Contractor must conduct a thorough inspection of the surface of each structure to ensure there are no holes evident due to damage within the structure. This inspection may consist of compressing the grass around a structure, pouring water in depressions to check for infiltration within the structure, and/or using a probing rod to check for voids.
- B. The Contractor must install a safety barrier around any hole found and contact DWR's Contract manager immediately.

**\*\*END OF SECTION\*\***

## SECTION SWR 4 – SURVEY

### PART 1- GENERAL

#### 1.1 WORK THIS SECTION

- A. The purpose of this work is to establish the position (location) of various items, as directed by the County, using Global Positioning System (GPS). Only one level of GPS accuracy will be utilized. Survey grade GPS will be +/- 0.1-foot accuracy. On all surveys the X, Y, and Z position coordinates will be provided.
- B. Typically the following items will be located:
  - 1. Manholes and pipes – survey grade

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards (None Cited)
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Storm Water Systems, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Gwinnett County Department of Water Resources, Information Applicable to Infiltration/Inflow Projects
- F. Related sections of the Storm System Rehabilitation Specifications
  - 1. Section SSR 3, Storm Pole Manhole Condition Assessment

#### 1.3 DEFINITIONS (None Cited)

#### 1.4 EXPERIENCE

- A. Supervisor of the field crews shall have received proper training in this function and have a minimum of five (5) years of experience in performing such assignments including safe working practices, confined space safety procedures, the types of equipment being used, product/materials being used, etc.
- B. Field crew leaders shall have received proper training in this function and have a minimum of three (3) years of experience in performing such assignments including safe working practices, confined space safety procedures, the types of equipment being used, product/materials being used, etc.
- C. The Contractor shall not employ any procedure or utilize any equipment that the Contractor's personnel do not have the above stated minimum experience with.
- D. All other crewmembers shall have received proper training in this assignment and have a minimum of one (1) year experience.
- E. The Contractor shall provide the County with written documentation that the supervisor, crew leader/s and all crewmembers responsible for such assignments have received the proper training and where required the requisite experience.

#### 1.5 REFERENCE COORDINATE SYSTEM

- A. The Contractor will provide x, y, and z coordinates, including invert elevations (rim to invert)
  - 1. The following datum shall be used for each coordinate value:
    - a. Horizontal: Georgia State Plane (West Zone/1002) in the NAD 83(94) projection
    - b. Vertical: North American Vertical Datum of 1988 (NAVD 88)
  - 2. These coordinates will be tied to the existing Gwinnett County Control network.
  - 3. The procedures used to collect the data will be utilized so that the precision of the measurements shall meet the tolerance (+/- 0.1-foot +/-3.0-feet) as specified by the County for each item to be located.
  - 4. The point of measurement on each item shall be indicated by a dot of green paint.



- B. The Consultant shall use a combination of conventional surveying (EDM) and GPS methods to collect the data. The project will be controlled using the existing Gwinnett County Control network and will be complimented (additional points will be added) as needed to ensure that the required project accuracy standards will be attained.
  - 1. In suitable areas a GPS rapid static method will be utilized to collect the data. Three (3) dual frequency GPS receivers will be used - one receiver will serve as the base station and two units will be used as rovers. Each data point will be occupied for no less than five (5) minutes on two separate occasions. Invert elevations will be obtained using a level rod and a clinometer. The clinometer will be used to compensate for the slope of the rod.
  - 2. In areas that are unsuitable for GPS measurement, conventional surveying methods will be used to collect the data. Total stations will be used to obtain the data points. Invert elevations will be obtained using a vector data collection method that will account for the slope of the rod automatically.

#### 1.6 PROVIDED BY COUNTY

The County will provide the Contractor with the following:

- 1. An electronic base map that will include the County Facility ID Numbers, when applicable, of the items to be surveyed. This shall be GIS personal geodatabase or shape files.

#### 1.7 DATA ACCURACY

Calibration shall be carried out at least on a daily basis in accordance with the GPS equipment manufacturer's instructions. Additional calibrations may be required during the course of the working day for large fluctuations of temperature and/or humidity, also in accordance with the manufacturer's instructions and tolerances. The accuracy of the coordinates shall be +/- 0.1-foot as directed by the County.

#### 1.8 MEASUREMENT AND PAYMENT

Payment for survey grade GPS of asset location will be paid at the unit price bid. Survey grade GPS shall be per each asset located. Payment will be full compensation for furnishing all labor, tools, traffic control, and equipment necessary to perform all work in accordance with this SSR. Payment for survey grade GPS of asset locates shall be made under GPS/Mapping, GPS Asset Location, per each.

### PART 2-PRODUCTS/EQUIPMENT

It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must provide all equipment required to comply with the regulations and guidelines.

### Part 3-EXECUTION

#### 3.1 GENERAL

The Contractor shall furnish all labor, tools, traffic control, materials, software and equipment necessary for capturing the position of all items specified.

#### 3.2 PREPARATION

Scheduling: Contractor shall plan the collection of GPS data, using the appropriate software, to optimize the accuracy and speed of data collection while minimizing the impact and interference on traffic and other activities.

#### 3.3 DOCUMENTATION OF DATA

- A. A Microsoft Excel file for manhole locates will include the following attributes: the Facility ID of the manhole, all pipe Facility IDs, the address, a street or creek name in the vicinity of the subject item, and the X, Y and Z coordinates of the manhole and all mains. Contractor shall deliver data in the format

as outlined in the DWR GIS data dictionary. Filename STORMCONTRACTORS.ddf.

- B. Manholes will be located at the center of the manhole cover.
- C. The Contractor shall submit to the County a list of all new structures found during that Inspection month assigning them with a Temporary Facility ID number. The Temporary ID number will be assigned based on using a nearby structure ID and adding an "A" to the end of the number. The Contractor will also provide the X, Y coordinate for GIS mapping purposes. The County will then provide the Contractor with permanent Facility ID numbers. A Map of each shall also be accompanied with the list of new structures and include the Temporary Facility ID numbers, pipe material, Pipe Diameter and upstream / downstream inverts. The Contractor will be required to provide Final GPS Survey points for all new structures in Shape file format along with an Excel spreadsheet to include the Facility ID Number, Northing, Easting, Elevation, Structure Type, GPS method and Date.

### 3.4 DELIVERABLES

- A. Excel Data Files as indicted above.
- B. Corrections to the base map will be illustrated on a printed copy of the base map with red markings and delivered to the County on regular intervals as directed by the County. Supplemental sketches will be provided, as necessary, to clearly depict the actual site conditions.
- C. Coordinate and attribute data will be provided to the Contractor electronically as a personal geodatabase or shape files.

### 3.5 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
- B. The minimum level of accuracy to be attained under the various recorded points is 98%.
- C. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- D. The data submissions shall undergo the same review checks for Quality when submitted to the County. Should accuracy levels fall below 90%, the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until 98% level of accuracy is reached. Continuous data submittal refusals for quality under 98% will constitute cause for dismissal.

**\*\*END OF SECTION\*\***

# Section B

## Gwinnett County Sewer Condition Assessment Program

## **GWINNETT COUNTY SEWER CONDITION ASSESSMENT PROGRAM SECTION B**

### **PART 1 - PROJECT DESCRIPTION**

#### **1.1 PURPOSE**

To Inventory and Assess the County's Sanitary Sewer System

#### **1.2 Details related to each work tasks are located in the following sections of the System Specifications.**

1. Section SSR 1, Sanitary Sewer Television Inspection
2. Section SSR 2, Sanitary Sewer Cleaning
3. Section SSR 3, Sanitary Sewer Manhole Condition Assessment
4. Section SSR 5, Sanitary Sewer Smoke Testing
5. Section SSR 7, Sanitary Sewer Survey
6. Section SSR 10, Sanitary Sewer Wastewater Flow Control
7. Section SSR 21, Sanitary Sewer Overflows and Spills
8. Section SSR 24, Sanitary Sewer Critical Crossing Assessment
9. Miscellaneous Services

### **PART 2 - SCOPE OF SERVICES**

The Contractor shall supply all labor, equipment, tools, and vehicles necessary to inspect, assess and clean the County's sewer system and it attributes that are assigned to them under this contract. Field assessments include but are not limited to: locating, inspecting, CCTV, GPS, smoke testing and cleaning of all assigned assets.

#### **2.1 General Notes:**

- A. The Contractor will receive an assigned work area from the County's Contract manager for the inspection of certain County assets. It is intended for work to be consistent in assignment by area but not limited to an area; areas of concern may be requested outside the normal assignment under the discretion of the County's Contract Manager. Once the inspections of these assets have been completed the Contractor will return the data gathered in an Access Database along with all associated media (pictures or videos) and an invoice to the County's Contract manager at the end of each month. The County's Contract Manager reserves the right to withhold future assignments to ensure completion of previous assignments.
- B. Numerous manholes and pipes are located in wooded easements. The Contractor is to be aware that the location of these manholes may prevent vehicular access. The Contractor is still responsible for the inspection of these assets and including them in their daily work.
- C. DWR may or may not be able to clear the wooded easements prior to the Contractor beginning work. In which case it shall be the contractors responsibility to navigate the wooded easements.
- D. Numerous manholes have bolted lids to prevent inflow in the event of flooding and/or overflow due to surcharging of the sewer system. Before opening these manholes confirm the sewer system is not surcharged. Overflows resulting from contractor error will be the responsibility of the contractor. Opening and closing these manholes with bolted lids requires the manipulation of four (4) bolts. Crews may come across manholes with security bolts installed on them. Removing these security bolts requires a key that will be furnished by the DWR. Security bolts are not to be replaced on the manhole. DWR will provide standard bolts to replace the security bolts. Requests for resupply of bolts shall be made 24-48 hours in advance to insure crews are properly supplied at all times. The contractor must include the manpower to access these manholes. Required

equipment includes, but is not limited to, rechargeable heavy-duty impact drill, 3/4-inch socket, 15/16 –inch socket, allen wrench, large drill and bits to drill out broken off bolts, large screw driver, pry bar, cutting torch, various manhole hooks and DWR provided key. If the contractor loses the key, there will be a \$150.00 replacement cost. **In the event the manhole is found with bolts installed from the bottom the contractor shall remove and install bolts correctly.** If the contractor cannot open the manhole he will need to contact DWR for assistance.

- E. The bolted lids must remain bolted and closed at all times, except when actively using the manhole. Failure by the Contractor to maintain the bolted lids will result in fines/disciplinary actions up to and including termination.
- F. If the Contractor discovers a bolted lid that is not fully bolted the Contractor must install bolts and completely bolt the lid (these bolts will be supplied by the County). If the Contractor is unable to install a bolt for any reason, including the existing bolt is broken off, stripped threads, etc. the Contractor will make notations to be delivered with monthly deliverable. In the event that a condition is noticed that will impact or disrupt the sewer service the contractor shall notify DWR **immediately.**

## 2.2 PROJECT MANAGEMENT

Project management includes those activities involved with the detailed planning and subsequent execution, monitoring, data management and control of the project. The level of effort and budget for such services shall be considered and included in the individual tasks and unit costs of the Project. In developing the Bid Schedule, the DWR expects the Contractor to provide the following services throughout the project:

- A. Deliverables shall be submitted no later than 4 weeks after the end of the inspection month. Invoices will be submitted with an Access Database listing of each inspection and all associated media (pictures and videos). The monthly invoice, data base and media will be submitted utilizing the template format as provided by DWR. Database will include submissions from sub-contractors employed by contractor; DWR will accept one comprehensive database deliverable from contractor.
- B. Coordination with DWR, other utility companies, and all local, State, or Federal department or agencies, as required for the proper execution of the work, shall be maintained throughout the life of the project. This coordination shall include arranging meetings, resolving technical issues, and coordinating tasks that will involve DWR's personnel.
- C. DWR's Contract manager will be DWR's primary point of contact for the Contractor throughout the life of the project.
- D. The Contractor's Project manager will be the Contractor's primary point of contact for DWR throughout the life of the project.

## 2.3 QA/QC

The Contractor shall develop a plan for Quality Assurance/Quality Control (QA/QC). This plan will include both office and field related QA/QC practices of the Contractor and all sub-consultants/sub-contractors. The selected Contractor shall submit a written QA/QC plan for DWR's files prior to conducting any work. DWR will not approve the Plan, but will expect the Contractor to abide by their QA/QC Plan. The plan must include a system of checks and balances that ensures all information, including but not limited to, data, reports, drawings, and GIS is QA/QC'ed before submittal to DWR.

- A. A written statement confirming that each submittal has been QA/QC'ed by the Contractor must accompany every submittal to DWR.
- B. All project deliverables are to be prepared and delivered in the approved digital format.

#### **2.4 SAFETY**

Safety is utmost importance to DWR. The Contractor will conduct the project in a safe manner so that no accidents occur. The Contractor shall submit a written comprehensive safety plan to DWRs Contract manager, if requested. DWR will not approve the plan, but will hold the Contractor accountable to the plan. The Contractor must meet all Federal, State, County laws and local requirements. The Contractor's personnel must be completely familiar with and trained in all safety procedures required for the safe execution of this project.

The Contractor will ensure their sub-consultants and sub-contractors have active safety programs at least as comprehensive as the Contractor's.

### **PART 3 - INFORMATION TO BE PROVIDED IN THE BID**

#### **3.1 CONTRACTOR IDENTIFICATION/PROFILE**

**Give the full legal name of the Contractor, the Contractor's principal business office and its satellite offices, if any; and indicate the location(s) from which these services for DWR would be staged. Give information on the Contractor's history, business activities, size, employees, officers, affiliates, subsidiaries, ownership and other corporate data. Project teams are acceptable, provided that overall project accountability is with the lead Contractor. If an association with other firms(s) is proposed, describe the working relationship, identify specific areas of responsibility of each firm, and identify the lead firm that will have overall project accountability, as well as any specific past experiences with said firm(s) and the working relationship.**

#### **3.2 REFERENCES/EXPERIENCE/REQUIREMENTS OF THE CONTRACTOR**

References should detail the experience of the Contractor with similar projects and other relevant experience. Similar projects are projects that required the same level of service, or greater, at the same order of magnitude, or greater, as will be required for this project. The experience must be that of the Contractor and not that of a parent or related company or the experience of an individual/s. Contractor must have been in business for a minimum of five (5) years.

- A. For the tasks of structure assessments, pipeline inspections, and CCTV inspections, the Contractor, through references provided, must demonstrate a minimum level of experience. The minimum level of experience should include three (3) to five (5) similar completed projects within the last seven (7) years and should include all information as requested.
- B. Contractor should demonstrate through their completed projects a minimum experience of
  1. 10,000 manhole inspections,
  2. 800,000 lf of CCTV including 35,000 lf of CCTV greater than 37"
  3. 600,000 lf of sewer line cleaning including 10,000 lf of cleaning greater than 37"
  4. 300,000 lf of smoke testing

#### **3.3 QUALIFICATIONS AND EXPERIENCE OF THE CONTRACT MANAGER AND OTHER KEY PERSONNEL**

- A. The Project manager shall be qualified to lead this project and should have a minimum of five (5) years' experience as a Project manager on similar sized projects. Experience with previous employers on projects of similar size and scope is acceptable. The Project manager shall have

been in leadership roles on inventory and condition assessment projects of similar scale including preparation of reports, management of field-monitoring, management of field-data collection, analysis, data management, GIS, quality assurance and have the authority to commit the necessary resources of the Contractor.

- B. The Data Manager shall have been in leadership roles for a minimum of three (3) years on inventory and condition assessment projects of similar scale including preparation of reports, management of field-data collection, analysis, data management, GIS, and quality assurance.
- C. All personnel conducting and/or evaluating inspections shall be PACP certified. If the Contractor's personnel have not been trained in and are not currently certified in the use of NASSCO's Pipeline Assessment and Certification Program (PACP), then the Contractor personnel must obtain the training and certification at the cost of the Contractor before working on this project and must provide written documentation of certification to DWR
- D. No crewmembers shall enter confined spaces without the necessary certified training and at least one-year experience as well as written permission from DWR.
- E. The Contractor shall provide the County with written documentation that the Project Manager and Data Manager have the requisite experience as outlined above. This documentation shall be submitted as a part of the bid.

### **3.4 SCHEDULE**

It is anticipated that this project will require 12 months of steady data collection.

### **3.5 BID SCHEDULE**

The Bid Schedule shall be submitted using the form as provided in this document. The format should not be changed. The Bid Schedule includes unit price line items for both office and field related activities. Unless otherwise stated, the cost associated with all activities will include all overhead, ODC's, QA/QC costs, safety costs including traffic control, project management, labor, field-monitoring, field-data collection, analysis, in office data management, etc. to complete each activity in compliance with these specifications. All items on the Bid Schedule should be completed

**FAILURE TO RETURN THIS PAGE AS PART OF YOUR BID DOCUMENT MAY RESULT IN REJECTION OF BID.**

**SEWER ASSESSMENT PROGRAM BID SCHEDULE**

ITEM #	DESCRIPTION	UNIT	UNIT COST (see note 1 below)	APPROX. ANNUAL QUANTITY	TOTAL
<b>GPS/MAPPING</b>					
1	GPS Asset Location (survey grade GPS)	EA	\$	3,500	\$
<b>INSPECTION SERVICES</b>					
2	Manhole Condition Assessment (MACP Level 1)	EA	\$	10,000	\$
3	Zoom Camera Manhole Inspection (MACP Level 2)	EA	\$	100	\$
4	Man Entry Inspection (MACP Level 2)	EA	\$	100	\$
5	Critical Crossing Assessment	EA	\$	500	\$
<b>SMOKE TESTING</b>					
6	8"-12"	LF	\$	300,000	\$
7	13"-18"	LF	\$	30,000	\$
8	19"-30"	LF	\$	5,000	\$
<b>SEWER LINE TELEVISION INSPECTION</b>					
9	up to 12"	LF	\$	700,000	\$
10	13" to 18"	LF	\$	30,000	\$
11	19" to 27"	LF	\$	15,000	\$
12	28" to 36"	LF	\$	15,000	\$
13	37" to 50"	LF	\$	30,000	\$
14	51" to 72"	LF	\$	5,000	\$
15	Sonar-TISCIT 19" to 27"	LF	\$	1,000	\$
16	Sonar-TISCIT 28" to 36"	LF	\$	1,500	\$
17	Sonar-TISCIT 37" to 50"	LF	\$	1,500	\$
18	Sonar-TISCIT 51" to 72"	LF	\$	1,500	\$
19	Laser Sensor add-on	LF	\$	5,000	\$
20	Hydrogen Sulfide Sensor add-on	LF	\$	5,000	\$
21	Sewer Lateral Inspection (Launch from Sewer Main)	LF	\$	1,500	\$
22	Sewer Lateral Inspection (Push from Ground Surface)	LF	\$	1,000	\$
<b>SEWER LINE CLEANING</b>					
23	Sewer Lateral Cleaning	EA	\$	50	\$
24	Remove Protruding Service/Stub Cut	EA	\$	50	\$
Light Cleaning of Sewer Main - material and debris equal to no more than 25% diameter of pipe					
25	up to 12"	LF	\$	600,000	\$
26	13" to 18"	LF	\$	15,000	\$



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**SEWER ASSESSMENT PROGRAM BID SCHEDULE**

ITEM #	DESCRIPTION	UNIT	UNIT COST (see note 1 below)	APPROX. ANNUAL QUANTITY	TOTAL
27	19" to 27"	LF	\$	8,000	\$
28	28" to 36"	LF	\$	5,000	\$
29	37" to 50"	LF	\$	9,000	\$
30	51" to 72"	LF	\$	1,500	\$
<b>Heavy Cleaning of Sewer Main - material and debris equal to more than 25% diameter of pipe.</b>					
31	up to 12"	LF	\$	12,000	\$
32	13" to 18"	LF	\$	3,000	\$
33	19" to 27"	LF	\$	1,000	\$
34	28" to 36"	LF	\$	1,000	\$
35	37" to 50"	LF	\$	800	\$
36	51" to 72"	LF	\$	800	\$
<b>Specialty Cleaning of Sewer Main - Heavy roots and grease, large diameter rocks and debris.</b>					
37	up to 12"	LF	\$	3,000	\$
38	13" to 18"	LF	\$	1,500	\$
39	19" to 27"	LF	\$	500	\$
40	28" to 36"	LF	\$	500	\$
41	37" to 50"	LF	\$	500	\$
42	51" to 72"	LF	\$	500	\$
<b>BYPASS PUMPING</b>					
43	Setup for 3"- 6" Pump	EA	\$	5	\$
44	Setup for 8"- 12" Pump	EA	\$	5	\$
45	Discharge Line for 3"- 6" Pump	LF	\$	1500	\$
46	Discharge Line for 8"- 12 Pump	LF	\$	1500	\$
47	Operation of 3"- 6" Pump	HR	\$	40	\$
48	Operation of 8"- 12" Pump	HR	\$	40	\$
<b>SECTION B TOTAL</b>					\$
<b>MISCELLANEOUS SERVICES</b>					
Labor & Materials, cost plus % (not to exceed 10%)					%

**NOTES:**

1. Pricing to include all expenses, overhead and profit.
2. Please pay close attention to "UNIT" values when quoting pricing.
3. Pricing is to be provided for ALL items.
4. Some items may be used extensively while other items may not be used at all.

COMPANY NAME: \_\_\_\_\_

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**SEWER ASSESSMENT PROGRAM BID SCHEDULE**

Gwinnett County requires pricing to remain firm for the duration of the initial term of the contract. Failure to hold firm pricing for the initial term of the contract will be sufficient cause for Gwinnett County to declare bid non-responsive. Contract to begin January 1, 2021 or upon award, whichever date is later.

Unless otherwise noted, quoted prices will remain firm for four (4) additional one (1) year periods.

- If a percentage decrease will be a part of this quote, please note this in the space provided together with an explanation.

1<sup>st</sup> Renewal Period \_\_\_\_\_

2<sup>nd</sup> Renewal Period \_\_\_\_\_

3<sup>rd</sup> Renewal Period \_\_\_\_\_

4<sup>th</sup> Renewal Period \_\_\_\_\_

- If a percentage increase will be a part of this quote, please note this in the space provided together with an explanation.

1<sup>st</sup> Renewal Period \_\_\_\_\_

2<sup>nd</sup> Renewal Period \_\_\_\_\_

3<sup>rd</sup> Renewal Period \_\_\_\_\_

4<sup>th</sup> Renewal Period \_\_\_\_\_

Certification of Non-Collusion in Bid Preparation \_\_\_\_\_  
Signature Date

**In compliance with the attached specifications, the undersigned offers and agrees, if this quote is accepted by the Board of Commissioners within ninety (90) days of the date of quote opening, to furnish any or all of the items upon which prices are quoted, at the price set opposite each item, delivered to the designated point(s) within the time specified in the quote schedule. By submission of this bid, I understand that Gwinnett County uses Electronic Payments for remittance of goods and services. Vendors should select their preferred method of electronic payment upon notice of award. For more information on electronic payments, please refer to the [Electronic Payment](#) information in the instructions to bidders.**

Legal Business Name \_\_\_\_\_

Federal Tax ID \_\_\_\_\_

Complete Address \_\_\_\_\_

Does your company currently have a location within Gwinnett County? Yes  No

Representative Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Telephone Number \_\_\_\_\_ E-mail address \_\_\_\_\_

## SECTION SSR 1 - SANITARY SEWER TELEVISION INSPECTION

### Part 1- GENERAL

#### 1.1 WORK THIS SECTION

- A. The work of this section is to determine the internal physical condition of the sewer main, locate physical defects, locate service connections and locate possible sources of infiltration and inflow.

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards
  1. NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the System Specifications
  1. Section SSR 2, Pipe Cleaning
  2. Section SSR 7, Survey
  3. Section SSR 10, Flow Control
  4. Section SSR 21, Overflows and Spills

#### 1.3 DEFINITIONS

- A. Television Inspection: Operation necessary to complete a true-color audio-visual inspection for verification of existing internal pipe conditions including pipe materials, pipe grade, connections and defects. Contractor shall furnish all labor, materials, equipment, tools, and other incidental services for closed circuit television inspection. (CCTV)
- B. Sonar Inspection: Operation necessary to complete an inspection for verification of existing internal pipe conditions including amount of debris in the bottom. Sonar inspection will supplement, not replace CCTV. Contractor shall furnish all labor, materials, equipment, tools, and other incidental services for sonar inspection. Sonar inspection of a particular pipe will only be conducted when approved in writing by the County.
- C. MPEG: MPEG (pronounced M-peg), which stands for Moving Pictures Expert Group, is the nickname given to a family of International Standards used for coding audio-visual information in a digital compressed format. For the purposes of this specification, MPEG shall be defined as an ISO- MPEG Level 4 standard (MPEG- 4) digital audio-visual coding having a minimum resolution of 500 lines. All video files shall be named using .mp4 as the file extension.
- D. External Hard Drive: For the purposes of this specification, an external hard drive is a peripheral auxiliary device that connects to the computer via a high-speed interface cable. The interface cable allows the external hard drive to communicate with the computer so that data may be passed back and forth. The most common types of interfaces are USB and Firewire. The Contractor will deliver all inspection databases, digital reports and media to the County on an external hard drive that is compatible with the County's desktop system. Sonar/TISCIT: Operation necessary to complete both a CCTV and sonar inspection for verification of existing internal conditions. Both the CCTV and sonar will be displayed together on the audio visual documentation. Contractor shall furnish all labor,

materials, equipment, tools, and other incidental services for the sonar/TISCIT inspection.

- E. Add-On: For the purposes of this specification, this means in addition to Sewer Line Television Inspection for the appropriate pipe size.

#### 1.4 EXPERIENCE

- A. Supervisor of the field crews performing these functions shall have the proper training in these types of equipment and monitoring functions and have a minimum of five (5) years of experience in performing such assignments including safe work practices, etc.
- B. Field crew leaders performing these functions shall have the proper training in these types of equipment and monitoring functions and have a minimum of three (3) years of experience in performing such assignments including safe working practices, etc.
- C. The Data Manager performing these functions shall have PACP certification and the proper training in these types of data management and monitoring functions and shall have a minimum of three (3) years of experience in performing such assignments including quality review processes, etc.
- D. The Contractor shall provide the County with written documentation (certification) that the supervisor, field crew leader and data Manager responsible for these assignments have the proper training and the requisite experience.
- E. No crewmembers shall enter confined spaces without the necessary certified training and at least one-year experience.
- F. The required experience shall be documented in the Contractor's Bid submittal.

#### 1.5 MEASUREMENT AND PAYMENT

- A. No separate payment will be made for television inspection when that inspection is associated with the installation of cured-in-place-pipe (CIPP). The work and materials being considered as incidental to and part of the CIPP unit bid prices. Contractor will be required to submit both a Pre-Lining and Post-Lining inspection, and these inspections must comply with the same technical standards and specifications as all CCTV Condition Assessment surveys.
- B. No separate payment will be made for the training and certification of Contractor personnel for NASSCO's Pipeline Assessment and Certification Program (PACP).
- C. Payment for lateral inspection shall be made at the unit bid price. The television inspection shall be measured by linear foot from the starting point of the inspection to the stopping point of the inspection. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work in accordance with this SSR. Payment for lateral inspection shall be made under Sewer Line Television Inspection, Sewer Lateral Inspection (Launch or Push), per linear foot.
- D. Payment for pipe television inspection shall be made at the unit price bid. Television inspection shall be measured by linear foot of pipe line from center of the upstream manhole to center of the downstream manhole. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work in accordance with

this SSR. Payment for television inspection shall be made under Sewer Line Television Inspection, Pipe Diameter (size), per linear foot.

- E. Payment for pipe Sonar/TISCIT inspection shall be made at the unit price bid. Sonar/ TISCIT inspection shall be measured by linear foot of pipe line from center of the upstream manhole to center of the downstream manhole. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for Sonar/ TISCIT inspection shall be made under Sewer Line Television Inspection, Sonar/TISCIT, Pipe Diameter (size), per linear foot.
- F. Payment for laser sensor add-on inspection shall be made at the unit price bid. Laser inspection shall be measured by linear foot of pipe line from center of the upstream manhole to center of the downstream manhole. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work in accordance with this SSR and shall separate from payment of CCTV. Payment for laser sensor add-on shall be made under Sewer Line Television Inspection, Laser Sensor add-on per linear foot.
- G. Payment for hydrogen sulfide sensor add-on inspection shall be made at the unit price bid. Hydrogen sulfide inspection shall be measured by linear foot of pipe line from center of the upstream manhole to center of the downstream manhole. Payment will be full compensation for furnishing all labor, tools, and equipment necessary to perform all work in accordance with this SSR and shall separate from payment of CCTV. Payment for hydrogen sulfide sensor add-on shall be made under Sewer Line Television Inspection, Hydrogen Sulfide Sensor add-on per linear foot.

## PART 2 - PRODUCTS

### 2.1 - GENERAL

- A. The Contractor shall furnish the mobile television/sonar inspection studio, television camera, sonar, audio-visual digital encoding equipment/software, and other necessary equipment, materials, power, labor, and technicians as needed to perform the television inspection.
- B. The television/sonar inspection equipment shall be capable of inspecting a minimum of 1,500 feet of pipe, when entry into the line can be accessed from the upstream and downstream manhole. When entry is at one end only, the inspection equipment shall be capable of inspecting seven hundred and fifty (750) feet by a self-propelled unit. The inspection equipment shall be capable of clearly televising the interior of 6-inch and larger diameter pipes. It shall be the contractor's responsibility to access and inspect all pipe segments assigned by GCDWR regardless of easement condition unless approved omission by County Construction Manager. In the event that access is prevented due to homeowner property restraints then multiple attempts at contact while in the area need to be made, then the facility ID and address need to be presented to the County Contract Manager to make contact and arrange communication with the contractor.
- C. The television/sonar equipment shall be transported in a stable condition through the pipe line main under inspection. Throughout the inspection, the camera equipment shall be positioned with the camera directed along the longitudinal axis of the pipe. When the television/sonar equipment is towed by winch and bond through the pipe line, all winches shall be stable with either locking or ratcheting drums. All winches shall be inherently stable

under loaded conditions. The bonds shall be steel or of an equally non-elastic material to ensure the smooth and steady progress of the camera/sonar equipment. The bonds shall be oriented in such a manner as to enable unhindered extension or retraction through the line. All effort shall be made to prevent damage to the pipe during the television/sonar inspection. In the case where damage is caused by the Contractor, for any reason, such as would be caused by incorrect deployment of bonds or retrieval of lodged equipment, the cost of repair or remedy shall be borne by the Contractor.

- D. When required the Contractor shall divert wastewater flow in accordance with the requirements of Section SSR 10, Wastewater Flow Control.
- E. The mobile studio shall be of sufficient size to accommodate four people for the purpose of viewing the television/sonar monitor while the inspection is in progress. The studio shall be insulated against noise and extremes in temperature, and shall be provided with means of controlling external and internal sources of light in a manner capable of ensuring that the monitor screen display is in accordance with the requirements of these Specifications. The County or its representative shall have access to view the television/sonar screen at all times. The central control panel and television camera and sonar control shall be located in the studio. The studio shall be mounted on a mobile vehicle (truck or trailer), which allows safe and orderly movement of the inspection equipment throughout the job site. The studio is not required for off-road assignments.
- F. The television camera used for the pipe line inspection shall be one specifically designed and constructed for pipeline inspection. The camera shall be waterproof and shall be operative in any conditions that may be encountered in the inspection environment. The Contractor shall provide a color pan and tilt camera to facilitate the inspection of service laterals, sewer mains, and manhole defects. The television camera shall be capable of 360° rotational scan indicating any salient defects. The tilt arc must not be less than 225° unless otherwise approved by the County. The adjustment of focus and iris shall provide a minimum focal range of 3 inches in front of the camera's lens. The distance along the pipe in focus from the initial point of observation shall be a minimum of twice the vertical height of the pipe. The illumination must be such as to allow an even distribution of the light around the perimeter without the loss of contrast, flare out of picture, or shadowing. The view seen by the television camera shall be transmitted to a monitor of not less than 11 inches in size. The television camera shall be capable of receiving and transmitting a picture having not less than a resolution of 500 lines. The travel speed of the television inspection camera (through the pipe) shall be uniform and shall not exceed 30 feet per minute.
- G. The Contractor shall test the television inspection equipment to verify the picture quality. The Marconi Regulation Chart No. 1 or the equipment manufacturer's recommendation shall be used to clearly differentiate between the following colors: white, yellow, cyan, green, magenta, red, blue and black.
- H. The television inspection equipment shall be of such quality as to enable the following to be achieved:
  - 1. Color: With the monitor adjusted for correct saturation, the six colors plus black and white shall be clearly resolved with the primary and complementary colors in order of decreasing luminance.
  - 2. Linearity: The background grid shall show squares of equal size, without convergence/divergence over the whole of picture. The center circle shall appear round

and have the correct height/width relationship (+/-5%).

3. Resolution: The live picture must be displayed on a digital capable of providing a clear, color, stable image free of electrical interference with a minimum resolution of not less than 500 lines.
4. Color Consistency: To ensure that the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the survey. In order to ensure color consistency no variation in illumination shall take place during the inspection.
  - I. The County may periodically check both the live and video picture color consistency against the calibration charts. Any differences will necessitate re-survey of the pipe lengths affected, at the Contractor's expense.
  - J. The closed circuit television monitor display shall incorporate an automatically updated record in feet and tenths of a foot of the distance along the line from the cable calibration point to the center point of the camera or center point of the transducer, whichever unit is being used. The relative positions of the two center points should also be noted. The Contractor shall use a suitable metering device that enables the cable length to be accurately measured; this shall be accurate to +/-1% or 6 inches whichever is greater. The Contractor shall calibrate the footage meter on a regular basis and demonstrate that the tolerance is being achieved by tape measurement between manholes on the surface. This taped measurement must be included on a quality control form which will be completed and submitted by the Contractor depicting the level of accuracy achieved.
  - K. If the Contractor fails to meet the required standard of accuracy, the County will instruct the Contractor to provide a new device to measure the footage. The County may at their discretion instruct the Contractor in writing, to re-survey those lengths of pipe first inspected with the original measuring device, at no additional expense to the County.
  - L. All audio-visual recordings and collected data made during the television inspection shall become the property of the County and shall be submitted to the County immediately upon completion of the television inspection.

## PART 3 - EXECUTION

### 3.1 - GENERAL

- A. Television/Sonar Inspection: The Contractor shall inspect pipelines with pan and tilt conventional television imagery and/or sonar and/or laser profiling imagery and/or hydrogen sulfide gas detection as specified so as to record all relevant features and defects of the pipeline under inspection. Inspection of pipelines shall be carried out utilizing NASSCO PACP standards.
- B. Cleaning shall be performed in accordance with the requirements of Section SSR 2, Pipeline System Cleaning. Pipes should be sufficiently clean so as to allow for clear viewing of all of the interior surfaces of the lines during television inspection.
- C. A PACP certified technician or supervisor shall control operation of television equipment and encoding of inspection. Should Contractor utilize any personnel to actually document

the inspection results that is not PACP certified, those inspections shall be refused and re-survey shall be completely at the Contractor's expense.

- D. Inspection shall be documented using NASSCO's Pipeline Assessment and Certification Program (PACP).
- E. If television/sonar inspection of an entire section cannot be successfully performed from one manhole, a reverse setup shall be performed to obtain a complete inspection. The objective of this project is to inspect the maximum amount of the sanitary sewer and it is likely that a number of reverse set-ups will be required in order to fully determine the extent of the problems and defects found.
- F. The Contractor shall provide a complete television inspection of both the upstream and downstream manholes beginning at the top of each manhole and panning down to inspect the entire manhole. Contactor shall also stop and pan each service lateral as standard procedure.
- G. Whenever prevailing conditions allow, the camera head shall be positioned to reduce the risk of picture distortion. In circular pipes, the camera lens shall be positioned centrally (i.e. in prime position) within the pipe. In non-circular pipes, picture orientation shall be taken at mid-height, unless otherwise agreed, and centered horizontally. In all instances the camera lens shall be directed along the longitudinal axis of the pipe when in prime position. A positioning tolerance of  $\pm 10\%$  of the vertical pipe dimension shall be allowed when the camera is in prime position.
- H. All television inspections shall be performed during low flow conditions. The County reserves right to refuse any television inspection that does not produce an effective survey of the pipe because of high flow conditions or for any other reason.
- I. If flows are greater than 25% of the pipe diameter the Contractor will either control the wastewater flow according to Section SSR 10, Wastewater Flow Control or return at a time when flows are less than 25%.
- J. If a laser inspection is authorized, the laser unit shall be mounted on the tractor or float so that the unit is above the water surface. The laser unit must not interfere with the forward view of the CCTV camera. If the unit is float mounted, the operator should make certain that there is sufficient headroom in the pipeline to prevent the laser mount from striking the crown of the pipe.
- K. Where laser and CCTV inspection are to be conducted in the same pipeline segment, the CCTV inspection should generally be conducted while the camera is conveyed forward through the pipeline and the laser inspection conducted during the return of the survey unit, with the camera lighting turned off.
- L. The speed that the camera or survey unit is conveyed through the pipeline while performing general inspections shall be uniform and shall be limited to a maximum of 30-feet per minute. During CCTV inspection, the survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, changes in water level, changes in size, side connections, junctions, or other unusual areas. When stopped at the defect or feature, the operator shall pan the camera to the area and along the circumference of the pipe.



- M. During period of camera advancement along the reach, the operator should pan to view the entire circumference of the pipe at regular intervals. This may be done while the camera is moving forward as long as the recorded picture quality is not adversely affected. When viewing the circumference, the camera should be returned to the forward position providing a full view of the pipe before panning to view the opposite side of the pipeline or the crown conditions.
- N. The Laser scanning equipment shall be capable of measuring the distances to objects and surfaces in pipes and shall be capable of imaging pipes from 30 inches to 180 inches in diameter. The laser shall support 75 Hz scan rates or higher and be Class 1 eye-safe for operator safety. The laser unit shall be capable of being repeatedly actuated to provide data that eliminates six degree-of- freedom sensor alignment problems. The laser sensor resolution shall be 1.0 mm, with a laser sensor accuracy of 1.0 cm at 10 feet in pipes 30 inches and larger.
- O. An integrated overview of Corrosion and Buildup data revealed from laser scanning is to be presented in a color coded format as an unrolled illustration of the pipe condition above the water level, over the length of the inspection segment. Measured pipe Internal Diameter (ID) that coincides with expected values must be coded green. Material loss (corrosion), as measured by increasing pipe ID, must be colored on a yellow/red color scale, with red indicating advanced corrosion. Material gain (buildup), as measured by decreasing pipe ID, must be on a blue color scale. To support identified radial localization of defects, individual ID measurements, as computed from the axis of the inspected pipe, must be presented in an illustrated corrosion/buildup graph form for the water level over the length of the inspection segment. Any deviation from above format must be pre-approved for the County Contract manager.
- P. Laser scan views identifying ovality and eccentricity must be presented in a color coded format as an unrolled illustration of the pipe condition to include the entire pipe circumference as well as a cross- section view where precision scans are taken during the pipe inspection survey. The color coding is to be identical to the aforementioned requirements. Where the presence of fluids in the pipe necessitates interpolation and estimation calculations to fill gaps and complete the full circumference view, the method and calculations used to support these assumptions must be presented. Sonar or as-built data, if used for these calculations, must be identified in the report. Areas revealing deflection greater than 2% must be identified in the report. Any deviation from above format must be pre-approved for the County Contract manager.
- Q. The laser equipment shall be purpose built for use in the inspection of pipelines and shall be operative in 100 percent humidity conditions. It shall be capable of being traversed by crawler tractor, float or other suitable means through the pipeline on a stable vehicle constructed to situate the laser inspection equipment above the water level.
- R. The laser equipment shall be designed and manufactured to produce a high resolution of measurement resulting in:
  - 1. 0.25% of internal diameter, with a laser sensor accuracy of 0.5% or greater that is an accuracy of 0.5 inches at 100 inches in pipelines up to 30 inches in diameter and an accuracy of 0.10% or greater for pipelines from 15 inches to 30 inches in diameter.

2. 0.25% of internal diameter, with a laser sensor accuracy of 0.5% or greater -that is an accuracy of 0.5 inches at 100 inches in pipelines up to 48 inches in diameter and an accuracy of 0.10% or greater for pipelines from 36 inches to 60 inches in diameter.

The laser equipment shall be operated in a manner to minimize measurement error sources attributable to the effects of:

1. Horizontal displacement from off-axis meander or pipeline alignment curvature that distorts cross- section measurement.
  2. Vertical displacement due to sediment, debris, offset joints or other physical environment conditions that distorts cross-section measurement
  3. Vertical displacement due to flow condition or other hydraulic environment factors that distorts cross- section measurement
- S. A color high resolution sonar still image of cross-sections of the pipeline must be taken and recorded every 50 feet or more frequently should the internal profile of the pipeline change, and at every defect. These images are to be cross-referenced to the reports and databases for ease of reference.
- T. If a sonar inspection is authorized, the sonar unit shall be mounted on the tractor or float so that the unit is under the water surface. The operator shall make certain that there is sufficient depth of fluid in the pipeline to prevent the grounding of the sonar mount, including an allowance for any debris or sedimentation.
- U. The maximum beam width of the sonar energy pulse will be no greater than 2 degrees from the center of the transducer. The transducer will be of the continuous scanning type. The sonar image will be in full color during the inspection.
- V. The sonar survey will include complete structural and service assessment of the equivalent PACP standard as that obtained through the CCTV survey. The sonar survey will include measurement of fluid depth and silt depth.
- W. The sonar survey will be continuously recorded and saved on external hard-drives in MPEG-4 format, supported by complete defect inspection database and summary reports.
- X. The Hydrogen Sulfide Sensor should read the presence of H<sub>2</sub>S above 2 parts per million (ppm). H<sub>2</sub>S levels in the air along with air temperature are to be captured for the duration of the inspection so that the entire pipeline is represented. The data must be logged in a digital format. The sensor must be an electrochemical type capable of capturing H<sub>2</sub>S levels and temperature data. The sensor's dynamic range shall be from 0ppm to 200ppm. Sensor measurement resolution shall be 0.1ppm. Readings shall be obtained once per minute. The sensor shall operate at pressures that vary from atmospheric by  $\pm 10\%$  and in 15-90% non-condensing humidity with a 90% response time of less than 60 seconds. The sensor shall provide H<sub>2</sub>S levels accurate to within  $\pm 1$ ppm at standard temperature and pressure.
- Y. Once the survey of the pipeline is under way, the following minimum information shall be displayed. If the displayed data is considered by GCDWR to be disruptive to the inspection image, alternate data display criteria will be discussed:

1. Automatic update of the camera's footage position in the line from adjusted zero
2. Pipe dimensions
3. Upstream Manhole Number
4. Downstream Manhole Number
5. Facility ID of Pipe being surveyed
6. Date of survey
7. Road name/location
8. Direction of survey
9. Time of start of survey
10. Pipe Material

### 3.2 DIGITAL AUDIO VISUAL RECORDING

- A. Video Recording: Continuous digital video recordings of the inspection view as it appears on the television monitor shall be taken. The recording shall also be used as a permanent record of defects. The recording shall be .MP4. The digital video encoding shall include both sound and video information that can be reproduced with a video image equal or very close to the quality of the original picture on the television monitor. The replay of the recorded video information, when reviewed by an ISO-MP4 compliant viewer, shall be free of electrical interference and shall produce a clear, stable image. The audio portion of the composite digital coding shall be sufficiently free of electrical interference and background noise to produce an oral report that is clear and complete and easily discernible.
- B. The audio portion of the inspection report shall include the location or identification of the upstream manhole number to the downstream manhole number, the direction of travel, the Pipe Facility ID being inspected, and the distance traveled on the specific run encountered. The inspection camera/sonar equipment shall be continuously connected to the monitoring equipment.
- C. The recording and monitoring equipment shall have the built-in capability to allow the County to instantly review both the audio and video quality of the recordings at all times during the inspection. The size and position of the data display shall be such as not to interfere with the main subject of the picture.
  1. Once the survey of the pipeline is under way, the following minimum information shall be continually displayed
  2. Automatic update of the camera's footage position in the line from adjusted zero
  3. Pipe dimensions
  4. Upstream Manhole Number
  5. Downstream Manhole Number
  6. Facility ID of Pipe being surveyed
  7. Date of survey
  8. Road name/location

9. Direction of survey
  10. Time of start of survey
  11. Material of construction of the pipe
- D. Separate .MP4 files shall be created for each pipe. In case of a reverse setup, PACP protocols shall be followed. MSA code shall be used and a new inspection created for reverse. MP4 files shall be written to External Hard Drive media for delivery to the County.
  - E. Footage and corresponding time elapsed shall be logged throughout survey/inspection for all relevant defects and construction features encountered unless otherwise agreed.
  - F. MPEG files shall be named according to the following file specification:  
  
**TV\_[PIPEID]\_[MMDDYYYY]\_[Incremental Number] .mp4**
  - G. The incremental number shall be used if multiple inspections are performed for the same line, such as a reverse inspection setup.
  - H. Facility ID numbers will be provided to the Contractor by the County in a personal geodatabase or shape files.
  - I. The County, at its sole discretion, reserves the right to refuse any MPEG, on the basis of poor image quality, excessive bit rates, inconsistent frame rates or any other characteristics that may affect usability by the County.
  - J. All continuous defects shall incorporate a start and finish abbreviation in the inspection.
  - K. All data submittals will be in a single PACP version 6.2 or higher database. All inspections shall be contained within one database.
  - L. All data submittals shall also contain a directory of all inspections and the corresponding Segment Grade and Quick rating Scores for Structural, Operation and Maintenance, and Overall.

### 3.3 - TELEVISION / SONAR INSPECTION REPORTS

- A. The Contractor shall complete a television/inspection report for each pipeline segment. These reports shall be per the format and defect codes of NASSCO's Pipeline Assessment and Certification Program (PACP) including the Scoring for Structural, Operation and Maintenance and Overall. Prior to beginning work, the Contractor shall submit a hardcopy sample of the television inspection report to the County for approval. All reports shall be exported in electronic format and delivered with the monthly invoice, database and media submittal.
- B. In addition to recording the defects for the pipes and manholes, the Contractor shall also record attribute data as work order header fields in their inspections according to PACP standards.
- C. The report shall include the results of all tests as described above, with all supporting spreadsheets, photographs/media and field notes. The report shall include a discussion of

the results, identifying all pipe segments with defects. A database showing the condition of each pipe segment with the pipe segment identification number and the location shall be submitted.

- D. Each pipe length, i.e. the length of pipe between two consecutive manholes, shall be entered on separate work order headers electronically. Thus where a Contractor elects to “pull through” a manhole during a CCTV and/or Sonar Survey and/or Laser, a new coding sheet shall be started at the manhole “pulled or walked through” and the footage re-set to zero at the preset on the coding sheet. Where a length of pipe between consecutive manholes is surveyed from each end (due to an obstruction or structural failure) two coding sheets should be used. Where a length of pipe between two consecutive manholes cannot be surveyed or attempted for practical reasons a complete header sheet shall be made out defining the reason for abandonment. At the start of each pipe length being surveyed or inspected and each reverse set-up, the length of pipeline from six feet in the entrance to the pipe, as the cable calibration point shall be recorded and reported in order to obtain a full record of the pipe length. All reverse set-ups, blind manholes, and buried manholes shall be logged on a separate log. Video digits shall be recorded so that every recorded feature has a correct elapsed time stamp and footage. Each log shall make reference to the start Upstream Manhole (AMH) and finish Downstream Manhole (AMH) unless abandonment took place because of blockage. Manhole Facility ID numbers shall be indicated in the remarks column of the detail report. Only the field “Direction of Inspection” and the order of the start and finish manholes as listed on the observations section of the inspection will be utilized to indicate reverse setups.
- E. Electronic copies (data files) shall be submitted in a PACP 6.2 or greater database.
- F. Electronic Report shall include:
  - 1. PACP Sewer Report (w/scoring)
  - 2. TV Inspection with Pipe-Run Graph
  - 3. Observation Report with Still Images
  - 4. Sonar Sediment Report (if applicable)
  - 5. Hydrogen Sulfide and Temperature readings (if applicable)

### 3.4 –LASER

- A. A laser Final Report shall be submitted in hard color copy and digital format on an external hard drive.
- B. Laser scan final reporting shall include the pipe's true diameter, ovality (per ASTM F1216), x/y diameter, and maximum diameter. Segments or areas revealing deflection in horizontal alignment greater than 2 % must be identified in the report. Where the presence of flow in the pipeline requires interpolation and estimation calculations to fill data gaps and complete the full circumference view, the method and calculations used to support these assumptions must be presented. Sonar profiling or other data sources, such as as-built data, if used for these calculations, must be identified in the report.
- C. The report shall provide a 2-D representation of an integrated overview of pipe wall thickness loss or increase data revealed from laser scanning, presented in a color coded format as an unrolled illustration of the pipe condition above the waterline over the length of the inspection

segment. The pipe interior is to be flattened into a graphic whose y-axis represents pipe diameter, whose x-axis represents pipe length and whose color represents deviation from expected values indicating a gradation and severity of corrosion or buildup. Measured pipe internal diameter (ID) that coincides with expected values must be coded in a color that positively identifies and differentiates the measurement of the expected values from pipe wall loss or increase.

- D. The report shall provide a 2-D representation of an integrated overview identifying concentricity, and deviation from concentricity resulting in ovality and eccentricity, presented in a color-coded format as an unrolled illustration of the pipe condition to include the entire pipe circumference (above the flow line) as well as a cross-section view. The pipe interior is to be flattened into a graphic whose y- axis represents pipe diameter, whose x-axis represents pipe length and whose color represents deviation from expected values indicating a gradation and severity of the deviation from concentricity. Measured pipe internal diameter (ID) that coincides with expected values must be coded in a color that positively identifies and differentiates the measurement of the expected values from actual concentricity measurements.
- E. The report shall provide a 3-D representation with variations in pipe wall shown in sharp relief for easy visual analysis for each of the aforementioned 2-D representations.
- F. Laser Final Report shall be submitted as a separate section in the CCTV/Sonar final inspection report, in color hard copy and in digital format on a non-returnable external harddrive.
- G. Laser Reports shall include (if applicable)
  - 1. Flat Summary Report
  - 2. Flat Analysis Report
  - 3. True Diameter Summary Report
  - 4. True Diameter Analysis Report
  - 5. Ovality Summary Report
  - 6. Ovality Analysis Report
  - 7. XY Diameter Summary Report
  - 8. XY Diameter Analysis Report
  - 9. Capacity Summary Report
  - 10. Capacity Analysis Report

#### 4.0 - DATA QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
- B. The system shall be such that the accuracy of reporting is a function particularly of:

1. The number of faults not recorded (omissions). Omissions may require resurvey of line segment with all defects recorded, at the discretion of the County Contract Manager. Resurvey will be performed at contractor's expense.
  2. The correctness of the coding and classification of each fault recorded.
  3. Each defect shall be recorded utilizing the pan and tilt function, post coding will result in line segment to be resurveyed to allow proper review of defect. Resurvey will be performed at contractor's expense.
- C. The minimum levels of accuracy to be attained under the various survey headings are as follows:
1. Header Accuracy 95%
  2. Detail Accuracy 98%
- D. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- E. The data submissions shall undergo the same review checks for Quality when submitted to the County. Should accuracy levels fall below standards the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until the level of accuracy is reached. Continuous data submittal refusals for quality under the accuracy standards will constitute cause for dismissal.

**\*\*END OF SECTION\*\***

## **SECTION SSR 2 - SANITARY SEWER CLEANING**

### **PART 1- GENERAL**

#### **1.1 WORK THIS SECTION**

- A. Sewer line cleaning to remove foreign materials and debris from the mains and restore the pipe to a minimum of 95% of the though flow channel and cross section, for clear viewing of the interior surfaces of the lines during television inspection, or as required for other specified rehabilitation.

#### **1.2 REFERENCES**

- A. Codes, Specifications, and Standards  
NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the System Specifications
  1. Section SSR 1, SSR 1\_Sanitary Sewer -Sonar Inspection
  2. Section SSR 3, SSR 3\_Manhole Condition Assessment
  3. Section SSR 7, SSR 7\_Survey
  4. Section SSR 10, SSR 10\_Wastewater Flow Control
  5. Section SSR 21, SSR 22\_Overflows and Spills

#### **1.3 DEFINITIONS (None Cited)**

#### **1.4 EXPERIENCE**

- A. The Contractor, or their subcontractor, must document that they, not their parent company or related company or the experience of an individual/s, have cleaned a minimum of 600,000 linear feet of sewer mains of the sizes involved for this contract. This documentation shall include locations, references (including names and phone numbers), pipe sizes and linear footages of those sizes.
- B. Experience documentation will be submitted as part of all bid. The Contractor shall provide the County with written documentation that the supervisor and field crew leaders responsible for this work have received the proper training, are certified, and have the requisite experience. This documentation will include dates of hands-on experience, employer, description of duties/experience, contact name and phone number. Documentation on any person shall not be longer than 1-page
- C. Supervisor of the field crews must be properly trained in this function and have a minimum of five (5) years of experience in performing sanitary sewer cleaning including safe working practices, proper cleaning procedures, and experience in the types of cleaning equipment that will be used for this contract.
- D. Field crew leaders must be properly trained in this function and have a minimum of three



(3) years hands-on experience in performing sewer cleaning including safe working practices, proper cleaning procedures, and experience in the types of cleaning equipment that will be used for this contract.

- E. No crewmembers shall enter confined spaces without the necessary certified training.

#### 1.5 PERSONNEL

- A. The Supervisor must visit the project site checking on their personnel and subcontractors, meeting with the field crew leaders as well as checking on the status and progress of the project.
- B. A field crew leader must be with their crew when their crew is working. Each field crew leader can only have one crew. Each crew must have its own field crew leader.

#### 1.6 MEASUREMENT AND PAYMENT

- A. Payment for light cleaning of lines shall be made at the unit price bid. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for light clean shall be made under Sewer Line Cleaning, Light Cleaning of Sewer Main, per linear foot.
- B. Payment for heavy cleaning of lines shall be made at the unit price bid. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for heavy clean shall be made under Sewer Line Cleaning, Heavy Cleaning of Sewer Main, per linear foot.
- C. Payment for specialty cleaning of lines shall be made at the unit price bid. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for specialty clean shall be made under Sewer Line Cleaning, Specialty Cleaning of Sewer Main, per linear foot.
- D. Payment for sewer lateral cleaning shall be made at the unit price bid. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for sewer lateral clean shall be made under Sewer Line Cleaning, Sewer Lateral Cleaning of Sewer Main, per each.
- E. Payment for removal of protruding service lines shall be made at the unit price bid. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for removal of protruding service lines shall be made under Sewer Line Cleaning, Remove Protruding Service, per each.
- F. No separate payment will be made for cleaning when that cleaning is associated with the installation of cured-in-place-pipe (CIPP). The work and materials being considered as incidental to and part of the CIPP unit bid prices. Contractor will be required to submit both a Pre-Lining and Post-Lining inspection, and these inspections must comply with the same technical standards and specifications as all CCTV Condition Assessment surveys as outlined in SSR-1.

#### PART 2- PRODUCTS

## 2.1 GENERAL

- A. The Contractor shall provide all supervision, labor, material, supplies, equipment, transportation, traffic control, etc., necessary to satisfactorily clean the sewer main(s).
- B. **Hydraulically Propelled Equipment:** The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal in diameter to the main being cleaned and shall provide a flexible scraper around the outer periphery to insure removal of grease. If sewer cleaning balls or other equipment, which cannot be collapsed, are used, special precautions to prevent flooding of the sewers and public or private property shall be taken.
- C. **High-Velocity Jet (Hydro cleaning) Equipment:** All high-velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size mains designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor and produce at least 2000-psi pressure. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel.
- D. **Mechanically Powered Equipment:** Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the main will not be allowed. A power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 500 feet of rod. The rod shall be specifically heat-treated steel. To insure safe operation, the machine shall be fully enclosed and have an automatic safety clutch or relief valve.
- E. The flow of sewage in the sewer mains shall be utilized to provide the necessary pressures for hydraulic cleaning devices whenever possible. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. The Contractor's truck/trailer must be permitted by the County as having the proper backflow prevention devices. The County will supply a meter that must be connected to the fire hydrants prior to the withdrawal of water to document all water usage by the Contractor. The Contractor will be required to record daily meter readings at the beginning and ending of each workday and provide these readings to the County representative with each pay request. The Contractor will not be charged any fees for the use of the meter nor for any water used in the execution of this work unless otherwise indicated. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant. No additional payment to the Contractor shall be made for the use of the meter or the documentation of water used. The Contractor shall be responsible for providing all other necessary hoses and tools for obtaining the water.

## PART 3- EXECUTION

### 3.1 GENERAL

- A. **Cleaning Precautions:** During cleaning operations, satisfactory precautions shall be taken

in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer main are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the pipe.

- B. Cleaning: The designated pipe sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. Selection of the equipment used shall be based on the conditions of pipes at the time the work commences. The equipment and methods selected shall be satisfactory to DWR. The equipment shall be capable of cleaning a minimum of 600' linear feet and of removing dirt, grease, rocks, sand, and other materials and obstructions from the pipes and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be repeated with other types of equipment.
- C. The term "clean" as used herein shall mean the complete removal of all garbage, dirt, gravel, rocks, roots, grease, settled sludge and all other solid or semi-solid materials from the pipes and manholes.
  - 1. Light Cleaning is defined as cleaning of a pipe that has an average depth of foreign material and debris equal to no more than 25% of the diameter of the main over the length of the manhole-to-manhole section. Rocks should be smaller than 3" diameter.
  - 2. Heavy Cleaning is defined as cleaning of a pipe that has an average depth of foreign material and debris equal to more than 25% of the diameter of the main over the length of the manhole-to-manhole section. Rocks should be larger than 3" diameter. If a pipe is encountered which requires heavy cleaning, the Contractor shall notify DWR of the problem before commencing work.
  - 3. As part of both Light and Heavy Cleaning, the Contractor shall scour debris or grease-laden manhole walls with high velocity water gun. No additional cost will be paid for such scour.
  - 4. Specialty Cleaning is defined as cleaning of a pipe that has heavy accumulation of roots and/or heavy accumulation of grease, large diameter rocks and/or debris and requires the use of bucketing and/or rodding methodologies to clean.
- D. Conditions such as broken main and major blockages may prevent cleaning from being accomplished, especially where additional damage would result if cleaning were attempted, or continued. Should such conditions be encountered, the Contractor shall not be required to clean those specific main sections unless the county removes the apparent obstruction.
- E. Whenever mains to be cleaned show evidence of being more than one-half filled with solids, bucket machines and/or rodding machines shall be utilized to remove the major portion of the material before hydraulic equipment or high velocity, hydro-cleaning equipment is brought into use for finishing the cleaning work.
  - 1. When bucket machines are used, the bucketing process shall be done in one main section at a time. A bucket of the proper size shall be placed into the downstream manhole and pulled, in intervals, towards the upstream manhole.
  - 2. The bucket shall be retrieved and emptied at varying intervals depending upon the

amount of materials being removed. When a bucket is retrieved and it is completely full or overflowing with materials, then the length of travel into the main shall be reduced to ensure total removal of debris. This process shall be repeated until the bucket has been pulled through the entire main section. Upon completion of the bucketing or rodding operation, hydraulically propelled

- F. Disposal of Materials: All solids, semisolids and/or liquids resulting from the cleaning operations shall be removed from the work site and disposed of at a site approved to accept wastewater debris and liquids. All materials shall be removed from the site no less often than at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as approved by the County. UNDER NO CIRCUMSTANCES SHALL DEBRIS AND/OR LIQUIDS REMOVED THEREFROM BE DUMPED INTO THE GROUND OR STREETS OR INTO DITCHES, CATCH BASINS OR STORM DRAINS FOR ANY LENGTH OF TIME. Contractor shall be responsible for all disposal costs.
- G. Protruding Tap Removal: Service taps extending into the pipe shall be removed by means of hydraulically or mechanically operated equipment. Chain cutters, clamshell cutters, and robotic lateral reinstatement cutters are typical equipment used to remove protruding taps. Taps should be removed so that the resulting protrusion is less than 1" at the greatest point. All debris resulting from protruding tap removal shall be removed immediately from the pipe. Where protruding taps are vitrified clay, grinding wheels may be used on lateral reinstatement cutters to insure a smooth finish. Where protruding taps prevent the passage of equipment through the pipe, notify the County immediately for point repair execution. Note: All protruding taps must be verified via television inspection prior to inserting any type of cutting tool into the main.
- H. Grease Removal: Grease shall be removed in designated sections where grease is a known problem and shall be considered part of the cleaning procedures. The Contractor shall provide a list of lines requiring grease removal to the County and the Contract manager so that they may be added to the County's on-going maintenance list. Special attention should be given during the cleaning operations to ensure the complete removal of grease from the top of the pipe. Procedures may include the use of mechanical equipment such as rodding machines, bucket machines and winches using root cutter and porcupines, and equipment such as high-velocity jet cleaners, and hot water. Chemical means of grease removal will be allowed upon request by the Contractor; however, it is considered subsidiary to Line Cleaning, and no additional payment will be allowed.
- I. Final Acceptance: Acceptance of pipe cleaning shall be made upon the successful completion of the television/sonar inspection and shall be to the satisfaction of the County. If the inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the pipe, at no additional cost to the County, until the cleaning is shown to be satisfactory.

### 3.2 CLEANING PRECAUTIONS

- A. Bucket machines or rodding machines shall be used very carefully because of their tendency to "hang-up" on or "wedge against" the sewer main and break it. Only experienced and well-trained operators shall operate the machines(s).
- B. Whenever hydraulically propelled cleaning tools, or high velocity, hydro-cleaning equipment or any tools which retard the flow of water in the sewer mains are used, precautions shall be

taken to ensure that the water pressure so created does not cause any damage or flooding to public or private property being served by the main involved.

- C. Any damage to the sewer mains caused by the Contractor's operations shall be repaired in a manner approved by the County at the Contractor's expense. The County reserves the right to make said repairs itself and charge the Contractor accordingly.
- D. Damage due to flooding of any public or private property being served by any main which is over- filled by Contractor's cleaning operations shall also be repaired or otherwise paid for by the Contractor.

### 3.3 DOCUMENTATION

- A. The Contractor shall keep records (in a log-type form) of the work accomplished in the cleaning of the pipes. With each pay request, digital backup documentation is required. The following information shall be required as a minimum:
  - 1. Location (street address) and type of surface cover.
  - 2. Manhole ID Number to Manhole ID Number.
  - 3. Pipe ID Number
  - 4. Date and Time.
  - 5. Length of Pipe.
  - 6. Condition and depth of manholes.
  - 7. Size and type of main.
  - 8. Type and condition of manhole.
  - 9. Type of cleaning performed and various types of equipment used.
  - 10. Meter readings (fire hydrant use).
  - 11. Remarks as to type of materials removed, amount of materials removed, and number of hours spent on each pipe section.

**\*\*END OF SECTION\*\***

## **SECTION SSR 3 - MANHOLE CONDITION ASSESSMENT**

### **PART 1- GENERAL**

#### **1.1 WORK THIS SECTION**

- A. The purpose of manhole condition assessment is to locate a manhole, document all incoming and outgoing pipes, and determine its physical dimensions, materials, structural condition, maintenance concerns, and sources of infiltration/inflow. NASSCO's MACP manhole condition assessment codes and standards will be utilized. Manhole condition assessments will be conducted on every manhole in the project basin, unless otherwise noted. Manholes that are encountered where a surface inspection is prevented due to depth will require use of zoom camera or man entry (drop down inspections).

#### **1.2 REFERENCES**

- A. Codes, Specifications, and Standards  
NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specification for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the Sewer System Rehabilitation Specifications
  1. Section SSR 1, SSR 1\_Sanitary Sewer Television/Sonar Inspection
  2. Section SSR 2, SSR 2\_Sanitary Sewer Cleaning
  3. Section SSR 7, SSR 7\_Survey
  4. Section SSR 10, SSR 10\_Wastewater Flow Control
  5. Section SSR 21, SSR 21\_Overflows and Spills

#### **1.3 DEFINITIONS**

- A. Buried Manhole: A manhole on a pipe, which is not visible at ground surface. All buried manholes on the sanitary systems shall be reported to be raised following their location. Subsequently, the raised manholes shall be inspected.
- B. Designated Manhole(s): Manholes identified by County to be assessed. For the purpose of this contract, Designated Manholes shall be all manholes on the sanitary sewer systems including new manholes, raised manholes, buried manholes, and unmapped manholes discovered during the project.
- C. Manhole: A subsurface structure where one or more pipes meet, with person access from the ground surface.
- D. Manhole Structure: Reference to and all activities relevant to manhole structures throughout the text shall also be taken to include junction boxes, inspection chambers, drop shafts, sumps, vaults and all other auxiliary structures appurtenant to the sanitary sewer systems.
- E. Mapped Manhole: A manhole that appears on the County's sewer system maps.

- F. Raised Manhole: A manhole in which the frame and cover has been raised above their previous level.
- G. Unburied Manhole: A manhole on a pipe to be assessed formerly buried below ground surface.
- H. Unmapped Manhole: A manhole not included on the County's sewer GIS system. An unmapped manhole is also known as an uncharted manhole.
- I. Exposed Manhole: A manhole in which the frame and cover are above normal levels above ground, i.e., more than 18-inches above ground level on any side.
- J. MACP: NASSCO Manhole Assessment and Certification Program

#### 1.4 EXPERIENCE

- A. Supervisor of the field crews performing these functions shall have the proper training in these types of equipment and monitoring functions and have a minimum of five (5) years of experience in performing such assignments including safe work practices, etc.
- B. Field crew leaders performing these functions shall have the proper training in these types of equipment and monitoring functions and have a minimum of three (3) year of experience in performing such assignments including safe working practices, etc.
- C. Entrants performing Man Entry inspections shall have proper training in these types of inspections as well as the equipment used to perform these inspections with a minimum of two (2) years of experience in performing such assignments including safe working practices, etc.
- D. The Contractor shall provide the County with written documentation (certification) that the supervisor, field crew leader and all crewmembers responsible for these assignments have the proper training and the requisite experience.
- E. The Data Manager performing these functions shall have MACP certification and the proper training in these types of data management and monitoring functions and shall have a minimum of three (3) years of experience in performing such assignments including quality review processes, etc.
- F. No crewmembers shall enter confined spaces without the necessary certified training and at least one-year experience.

#### 1.5 MEASUREMENT AND PAYMENT

- A. Payment for MACP Level 1 inspections shall be made at the individual unit price bid. MACP Level 1 inspection shall be per each manhole inspected and requires digital pictures taken top side. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for Manhole Condition Assessment Level 1 shall be made under Inspection Services, Manhole Condition Assessment (Level 1) per each.
- B. Payment for MACP Level 2 inspections shall be made at the individual unit price bid. MACP Level 2 inspection shall be per each manhole inspected and requires digital video taken of

inside of manhole. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for Manhole Condition Assessment Level 2 shall be made under Inspection Services, Zoom Camera Manhole Inspection (Level 2) per each.

- C. Payment for MACP Level 2 Man Entry inspections shall be made at the individual unit price bid. Man Entry inspections shall be per each manhole inspected and requires digital video taken of inside of manhole. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for Man Entry shall be made under Inspection Services, Man Entry per each.

## PART 2– PRODUCTS/EQUIPMENT

- A. Digital photographs shall be taken with a minimum 3.0 mega pixel color camera.
- B. Remote inspections for MACP Level II, when requested, shall be performed using a zoom camera capable of illuminating 75' to 250' of 6" to 60" pipe diameters. Manholes less than 20 feet deep, with all mains less than 48 inches in diameter, will be inspected from the ground level or with Man Entry into the manhole at the discretion of the County Contract Manager.
- C. The Contractor will provide high-powered hand held spotlights and mirrors (to direct natural sunlight into the manhole) to properly illuminate the interior of the manhole when a Top Side Inspection is performed.
- D. The Contractor shall ensure that the zoom camera is centered in the middle of circular pipe lines and manhole risers at all times during inspection. Using a steel tape or graduated survey rod, the manhole depths and components are to be measured from the invert to the manhole frame to the nearest .10 inch.
- E. Zoom camera Level II inspections will be completed using a self-portable zoom camera inspection unit conforming to the following criteria:
  - 1. Multi-directional closed-circuit television zoom camera inspection and lighting system;
  - 2. Wide angled lens manhole camera and lighting system for manhole wall inspections;
- F. Zoom camera inspection unit must use a waterproof, pan and tilt color camera, capable of entering into a minimum manhole cover size of (12 inches) including lighting, cables, power source, and other related equipment.
- G. The camera shall be equipped with an optic telephoto lens with sufficient magnification that the effects of pixilation do not degrade the farthest image.
- H. The light source will be adjustable to allow an even distribution of light around the sewer and manhole perimeter without loss of contrast, flare out of picture, or shadowing.
- I. The telescopic boom must be capable of lowering the camera to a depth of at least 20 ft inside the manhole.
- J. It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must



provide all equipment required to comply with these regulations and guidelines.

- K. The Contractor shall provide all labor, material, supplies, equipment, transportation, traffic control, etc., necessary to complete the manhole condition assessments.

### PART 3 - EXECUTION

#### 3.1 GENERAL

##### A. Manholes to be assessed (designated manholes):

1. The Contractor shall identify all designated manholes on the sewer systems to be assessed and confirm the manhole referencing system to be used throughout the survey and for all subsequent reporting. The Contractor shall inspect and record both mapped and unmapped manholes as well as buried and unburied manholes in addition to designated manholes. The visible portion of each main entering designated manholes shall also be inspected for Level I and II inspections, when accessible, to assess overall structural and service condition and possible forms of infiltration.
2. For manholes without a pre-assigned facility ID number the contractor shall assign a temporary unique identifier number from a series assigned by the County.
3. When buried manholes are discovered, Contractor will alert the County, and submit report of all buried manholes, their location and surface cover in electronic maps and hard copy versions.
4. When active infiltration is identified, Contractor will advise the County in writing of manholes encountered that require sealing.
5. When a broken manhole cover and/or casting are identified, Contractor will advise the County in writing of the location of such broken cover and/or casting.
6. Inspection data shall be submitted to the county following the MACP format. Digital data and high resolution digital photographs will be delivered to the County on external hard drives.
7. Digital photographs for Level I inspections shall be named in the following format:  
**M\_ManholeID\_Date\_IncrementalNumber.jpg**
8. Digital video for Level II inspections shall be named in the following format:  
**M\_ManholeID\_Date\_IncrementalNumber.mp4**
9. The manholes shall be located through the use of survey grade GPS.

##### B. Manhole Assessment Procedures for Level I and II inspections:

1. Manholes less than 20 feet deep, with all mains less than 48 inches in diameter, will be inspected from the ground level or with Man Entry into the manhole at the discretion of the County Contract Manager.
2. The manhole interior structure shall be manually inspected using high-level illumination. High- resolution digital photographs with approved picture quality shall be taken of observed defects as well as all other relevant features. Information gathered shall provide a full illustration of the condition of the manhole's interior as well as each main entering or leaving the manhole for Level I or II inspections.

3. If required to properly document the manhole condition the Contractor may be asked to employ a pole mounted lights and camera for Level II inspections.
4. The Contractor shall take digital photos and videos as described in this section, complete the assessment report, make map verifications, and record map corrections as necessary.
5. Man Entry – manhole assessment procedures: (This procedure will be utilized at the discretion of the County Contract Manager), the Contractor must seek approval from County Contract Manager before entry of manholes that have not been preselected for Man Entry.
6. The manhole interior structure shall be manually inspected using high-level illumination. High- resolution digital photographs and videos of approved quality shall be taken of observed defects as well as all other relevant features. Information gathered shall provide a full illustration of the condition of the manhole’s interior as well as each main entering or leaving the manhole.
7. Confined Space safety procedures must be employed.

### 3.2 DOCUMENTATION

- A. The MACP data standards for Level I and Level II inspections shall be utilized by the Contractor and submitted in electronic MACP version 4.2.5 or greater.

### 3.3 PHOTOGRAPHIC DOCUMENTATION PROCEDURES

- A. A set of high-resolution digital color photographs shall be taken for each Level I inspection performed, showing:
  1. Manhole cover (closed) taken from 20 feet downstream of manhole standing over effluent pipe.
  2. Manhole cover (closed) taken directly over the manhole.
  3. View from surface, of manhole invert – outgoing pipe at 6:00 o’clock.
  4. Any structural defects, evidence of leakage, obstructions, roots, mortar loss, evidence of hydrogen sulfide attack, etc.
  5. The digital photographs shall incorporate references to both manhole facility ID number and date when the photograph was taken. The annotation shall be clearly visible and shall have a 12pt (uppercase) font size. Each photograph filename shall be entered into the electronic database in the appropriate record that it is associated with and will include incremental number.
  6. If Level II inspection performed with a Zoom camera, then a compliant .mp4 digital video including all in/out pipes in the manhole shall also be submitted. Additional videos of inspections shall include incremental numbers in naming convention.

### 3.4 DELIVERABLES

- A. Electronic database MACP version 6.2 or higher with inventory and condition data, along with photographs and video of each inspection type shall be submitted to the County. The electronic database, using the required file format as outlined shall be tied to the County

GIS sewer maps through the Manhole facility ID numbers.

- B. Data Collection Methods: Electronic data must be delivered in the approved format for uploading to the County's Computerized Maintenance Management System (CMMS). However, the Contractor may use whatever method he chooses to collect the data. Electronic copies of blank data tables will be provided to Contractor at the Project – Kickoff Meeting.
- C. The Contractor shall be responsible for providing all computer hardware necessary to use Lucity .
- D. The Contractor shall be responsible for acquiring the appropriate version license of Lucity.

### 3.5 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
  - 1. The system shall be such that the accuracy of reporting is a function particularly of:
    - a. The number of faults not recorded (omissions). Omissions may require re-inspection of structure with all defects recorded, at the discretion of the County Contract Manager. Re-inspections will be performed at the expense of the contractor.
    - b. The correctness of the coding and classification of each fault recorded.
- B. The minimum levels of accuracy to be attained under the various survey headings are as follows:
  - 1. Inspection Accuracy 95%
  - 2. GPS Accuracy 98%
- C. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- D. The data submissions shall undergo a series of review checks for Quality when submitted to the County. Should accuracy levels fall below the standards outlined, the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until the required levels of accuracy is reached. Continuous data submittal refusals for quality under the required levels of accuracy will constitute cause for dismissal.

### 3.6 COLLAPSING MANHOLES, COLLAPSING PIPES

- A. Any manhole with severely compromised structural integrity and posing a hazard or threat of personal injury to the public must be reported to the County immediately for remedial action. Written confirmation of the report, including all details of the defect/hazard shall be made to the County within 24 hours of the discovery of the problem.
- B. The Contractor must protect any manhole with conditions that pose a threat of personal injury to the public until the County arrives at the job site.

### 3.7 BOLTED COVERS

- A. For all bolt-down style manhole covers, upon completion of the assessment, all bolts that were removed must be put back in place using sealing gaskets as necessary.

**\*\*END OF SECTION\*\***

## **SECTION SSR 5 - Smoke Testing**

### PART 1- GENERAL

#### 1.1 WORK THIS SECTION

- A. The objective of smoke testing (ST) the County's sewer system is to detect indirect and direct inflow sources (such as broken sewer pipe directly under drainage paths; storm sewer cross-connections; or faulty service connections) and direct inflow leaks (such as; roof leaders; stairwell, yard, driveway, patio, and area drains; foundation drains; broken or un-capped clean-outs; defective manholes; and abandoned building sewers).
- B. Preliminary field data collected by the Contractor will be provided to the County throughout the course of the field investigations. Priority defects that can have an immediate impact on the sewer operations or have public safety concerns should be brought to the attention of the County immediately to be scheduled for emergency repairs.

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards - None Cited
- B. Testing and Materials Standards (Attachment B – Inspection form)
- C. Specification for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Gwinnett County Department of Water Resources, Information Applicable to Infiltration/Inflow Projects
- F. Related sections of the Sewer System Rehabilitation Specifications
  1. Section SSR 7, Survey
  2. Section SSR 10, Wastewater Flow Control
  3. Section SSR 21, Overflows and Spills

#### 1.3 DEFINITIONS

- A. Contract manager: the Gwinnett County Department of Water Resources representative authorized to make decisions regarding the contract.
- B. Mapping grade: GPS accuracy within a range of +/- 3 feet.
- C. Public: sewers located within a road right of way or sewer easement.

- D. Private: sewers not located within a road right of way or sewer easement.

#### 1.4 EXPERIENCE

- A. Supervisor of the field crews shall have received proper training in this function and have a minimum of three (3) years of experience in performing smoke testing including safe working practices, familiarity with the inspection procedures and standards utilized, confined space safety procedures, the types of equipment being used, product/materials being used, proper estimate of flow being contributed by the I/I source, etc.
- B. Field Crew leaders shall have received proper training in this function and have a minimum of one (1) year experience in performing smoke testing including safe working practices, familiarity with the inspection procedures and standards utilized, confined space safety procedures, the types of equipment being used, product/materials being used, proper estimate of flow being contributed by the I/I source, etc.
- C. The Data Manager performing these functions shall have PACP certification and the proper training in these types of data management and monitoring functions and shall have a minimum of three (3) years of experience in performing such assignments including quality review processes, etc.
- D. The Contractor shall not employ any procedure or utilize any equipment that the Contractor's personnel do not have the above stated minimum experience.
- E. No crewmembers shall enter confined spaces without the necessary certified training and at least one-year experience.
- F. The Contractor shall provide the County with written documentation that the supervisor, crew leader and all crewmembers have received the proper training and where required the requisite experience and certifications.
- G. The Contractor shall take appropriate action to ensure that all employees are polite to the public in all aspects of the work performed.

#### 1.5 MEASUREMENTS AND PAYMENT

- A. Payment for smoke testing shall be made at the unit price bid per linear foot of smoked sewer and the size of sewer pipe tested according to size ranges provided in the Bid Sheet. Smoke testing shall be measured per linear foot of sewer line from center of the upstream manhole to center of the downstream manhole and shall include all costs associated with the inspection as required by this specification, including but not limited to documentation, public notification, and deliverables. Payment will be full compensation for furnishing all labor, tools, equipment and assessment necessary to perform all work in accordance with this SSR. Payment for smoke testing shall be made under Smoke Testing, Pipe Diameter per linear foot.

### PART 2- PRODUCTS/EQUIPMENT

#### 2.1 GENERAL

- A. Smoke Bombs or high-grade mineral oil shall be used to generate the smoke required for testing. Smoke shall be dense, non-toxic, odorless, non-exploding, and non-staining.

- B. Blowers and, where required, double blowers, shall be used to force smoke into the sewer and shall be portable, custom-mounted to be installed over an open manhole casting. Smoke blowers shall have a minimum capacity of 3,000 cfm (cubic feet per minute) and be type equal to or better than Cherne or Hurco Rip-cord blowers.
- C. It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must provide all equipment required to comply with the regulations and guidelines.

## PART 3- EXECUTION

### 3.1 GENERAL

- A. Intensified smoke testing techniques shall be employed in all cases. Intensified techniques shall include at least one blower capable of a free air delivery of at least 3,000 cfm and smoke generation for a minimum of nine minutes. Up to three main segments but no more than 900 feet of sewer main may be tested at one time. Main sections shall be adequately isolated if necessary by using sandbags, baffles, or other methods approved by the County. Smoke emanating from vents on building or adjacent manholes will determine the extent of successful smoke testing. Only clearly visible, dense smoke will qualify the sewer main tested for acceptance.
- B. Prior to beginning smoke testing the Contractor will provide a table that shows the linear feet of sewer main by pipe size that can be tested with the equipment being used by the Contractor.
- C. Smoke testing shall not be conducted on rainy days, on cloudy days following rain, or when saturated soil conditions exist. Rainy days are defined as days where greater than 0.25 inches of rain fall in any consecutive 24-hour period. Additionally, smoke testing will only be conducted when the groundwater level is low enough to provide accurate smoke testing results and when approved by the County. Testing shall be closely monitored on windy days. If smoke coming out of the ground is blown away so quickly as to escape accurate detection and/or photo documentation, testing shall cease until such time that weather conditions permit an accurate record of smoke testing results.
- D. The perimeter of each residence or commercial building shall be completely inspected, front and back, for sources of smoke. If inaccessible during testing, inspection shall be notated for rescheduling at a later date. The inspection shall include yard drains, catch basins, etc. that might be connected to the sewer system. The roofs of each building shall be visually inspected for evidence of roof drains connected to sanitary drains.
- E. Each smoke leak shall be documented as a defect, catalogued, and marked with a flag and a clearly visible paint mark made with non-permanent paint mark on public ground surfaces only. Flags only should be utilized on private property.
- F. The Contractor shall minimize the physical entry of personnel into the sewer facilities. If required, manhole entry shall be in accordance with Federal, and State regulations for confined space entry and any other regulations that may apply. The Contractor shall provide all safety equipment required for manhole entry operations, including harnesses, ventilation equipment, etc.

- G. The Contractor shall apply for and obtain work permits for all work to be performed in State and/or County right-of-ways. All other insurances, traffic control measures, and other terms of the permit shall be provided by the Contractor.
- H. The area of work at all times shall be protected by means of an adequate number of cones, barricades, flags, flaggers, and other measures necessary to meet MUTCD standards to properly and safely protect both vehicular and pedestrian traffic. Flag men shall be provided in all streets. Further requirements for Traffic control may be imposed by the specific agency having jurisdiction.
- I. Any condition deemed to be an unsafe condition shall be immediately corrected by the Contractor. The failure of the County field representative to bring a potentially dangerous situation to the Contractor's attention shall not relieve the Contractor from his sole responsibility for providing a safe work area.
- J. Flow Control – It is the intent of this specification that the smoke testing be accomplished without the need for bypass pumping. The Contractor shall provide temporary plugs 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 will notify the County in advance if a line is to be plugged as part of the smoke test. The Contractor shall monitor the resulting surcharged sewer at the manhole upstream of the section of sewer being tested, or at another location if so directed by the County, and prevent overflow conditions from occurring by removing the flow barriers in a timely manner. No payment shall be made for an incomplete smoke test abandoned due to the need to restore flow in the sewer.
- K. Prior to placing any smoke into the manhole, the Contractor shall first evacuate the system with a blower to ensure that any collection of explosive gas and any odor that may be introduced into the homes and businesses have been disperse prior to pressurizing the sewer with smoke. Evacuation may be accomplished by removing the manholes covers of all manholes in the run, then placing a vacuum on the manhole where the blower is located, and/or blowing air into the manhole.
- L. The Contractor shall not commence testing before 8:00 am and shall terminate testing no later than 5:00 pm each day.
- M. If the Contractor wishes to test before 8:00 am in commercial areas, such testing shall be shown on the submitted work schedule and shall be subject to the approval of the Contract manager.
- N. Smoke testing shall not be conducted on weekends or holidays without the written approval of the contract manager.
- O. All traffic control measures shall comply with the requirements of the Manual for Uniform Traffic Control Devices (MUTCD), Part 6 – Temporary Traffic Control, Latest Edition as published by US DOT / FHWA.

### 3.2 DOCUMENTATION

- A. The following data will be recorded on a paper form and entered into a database by the Contractor, using the required database format provided. Data, where specified, will be recorded using codes provided by the County. A hard copy report and electronic copy on

hard drive shall be submitted at intervals as required by the County's Contract manager. Interim files representing the progress of the work may be submitted via e-mail at the County's discretion, but e-mail transmitted files shall not be considered sufficient as a final electronic copy.. The smoke test database shall include the following information as outlined in Attachment A.

1. Description of the smoke leak, including intensity of smoke code and amount (i.e. equivalent gpm)
  2. Date and time
  3. Location, including reference to the relevant manhole (upstream and downstream manholes and sewer main facility ID numbers) and the nearest street address
  4. Area and type of surface drained by the smoke leak
  5. Weather Conditions
  6. Testing personnel
  7. Digital color photographs of the results of each test
  8. GPS x and y coordinates (mapping grade) of each smoke leak
  9. Defect source type
- B. Schematic layout of the manholes and sewer mains under testing including address and location, facility ID numbers, photo number and direction taken, defect source type, and type of surface drained. (Note geographical orientation relative to north)
- C. Example Smoke Testing Report Form is provided in Attachment B.
- D. A separate Smoke Test Report must be submitted for each sewer main segment tested regardless if a defect is found or not.
- E. The information will be submitted by the Contractor in the defined access database format and be electronically linked to the GIS mapping system. As a deliverable in this contract, the contractor will provide Gwinnett County with an updated GIS sewer layer in compliant ArcMap v10 format. The GIS layer will have all manhole and pipe connectivity issues corrected in accordance with standard GIS practice with pipe directions and snapping tolerances to provide a fully connected system. All newly unmapped structures located during the course of investigations shall be named according to the Gwinnett County temporary naming format. The sequence of numbers will be assigned at the start of the project.
- F. Smoke defect locations shall be documented by taking a mapping grade GPS reading of the defect location. The Contractor shall perform data entry in a digital format through keyboard or other electronic means in the field. The County shall review all deliverables and data submittals for completeness and for conformance to these protocols. The field computers shall utilize the County's GIS data collection format in order to provide a visual Quality check of all GPS readings against the background layers in the GIS as an added accuracy check for location accuracy. In addition the Contractor shall log the PDOP, number of satellites and other GPS quality indicators in the database.
- G. Any defects that need further investigation to pinpoint the location shall be recommended for dye flooding or CCTV inspection.



- H. Main line defects and service lateral defects will be carefully scrutinized to ensure that a conservative determination of public vs. private side defects is made.

### 3.3 PHOTOGRAPHIC DOCUMENTATION PROCEDURES

- A. The Contractor shall document each smoke leak or series of leaks by high-resolution digital photograph. Digital photographs shall be provided in jpeg (jpg) format. The resolution of the photographs shall be a minimum of 300 x 300 dpi and minimum dimension of 1800 x 1200 pixels. The photographs shall be referenced in the database by filename along with the location of the smoke leak.
- B. Photographs will be taken in such a way that the smoke leak is clearly visible in the foreground and a distinct fixed reference is visible in the background. When possible place a placard in the photo referencing the smoke leak number. For example, if the smoke leak is on a private service main in front of a house, the photograph should include a sufficient image of the house so that a person can re-visit the site and place himself/herself near the smoke leak, using only the photograph and address. This method of referencing something fixed will support QA/QC to ensure that smoke leaks, and their associated data, can be confirmed by a person other than the original testing crew.
- C. Digital photographs shall be orientated so that the long side of the photograph is horizontal and that 4"x 6" printed copies can be incorporated in the hard copy of the smoke testing report.
- D. Multiple digital photographs shall be taken to show the general location of the defect with some other notable object/land mark in the back ground when possible. A close up picture shall be taken to with a detailed view of the defect.
- E. The digital photographs shall incorporate references including the date the photograph was taken. Each picture shall have clearly annotated text that shall follow this naming convention: **SMK\_[SEWERMAINFACILITYID#]\_[CREW]\_[DATE]\_[INCREMENTAL#].JPG**.

### 3.4 PUBLIC NOTIFICATION

- A. Public notification is critical and compliance with the public notification criteria is a prerequisite for testing, especially when conducting tests on sewers in easements, which pass through private property. Notification must be provided to all property occupiers/owners likely to be affected including residential, commercial and institutional (schools, hospitals, nursing homes, etc). At a minimum, the following steps shall be taken:
  1. The Contractor shall distribute pre-approved advance notice flyers to both the homeowners of the testing area as well as neighboring streets that may be impacted by the testing area 72 hours before testing. If testing is delayed, the Contractor must re-distribute flyers.
  2. 24 hours prior to test the Contractor notifies the Fire Department closest to the test site.
  3. 60 minutes before the test the Contractor notifies the Fire Department closest to the test site.
  4. 60 minutes prior to the test the Contractor makes personal contact with a responsible person at schools, hospitals, nursing homes and all other institution/public facilities.
  5. The advance notice flyers shall be customized by the Contractor to suit this project and must be submitted for pre-approval by the County prior to project commencement. The

County must approve verbiage used on the notice. A typical flyer is included in Attachment C. The flyer shall include, as a minimum, information concerning:

- a. The reason for the testing
  - b. The date of testing
  - c. The location and area affected by the testing
  - d. The time of the testing
  - e. The contractor's name
  - f. Contact telephone and contact persons for further information.
6. Emergency Response Agency (Fire and Police): The Contractor shall identify a contact person at the appropriate precinct and notify daily as to area, start time, and ending time. The Fire Department must know the exact locations where the tests will be performed and during what specific time frames, and that fliers have already been dispatched to property owners/occupiers, and that the Right-of-Way signs, as described below, are in position.
- B. The Contractor shall keep a daily log of the distribution of the flyers and the Fire, Police and institutional/public facilities contacts made with responsible persons. These shall be maintained and submitted to the County upon request.
- C. Smoke testing shall not be allowed on rainy days, or cloudy days following rain, or when saturated soil conditions exist. Rain events of more than a ¼" shall be followed by at least a 24 hour drying out period before smoke testing may resume. Any standing water will indicate that additional drying out time is necessary. Drying time will be affected by temperature and rainfall recurrence intervals. The County will make the final determination on when it is dry enough to continue
- smoke testing. Previously notified areas may need to be re-notified if smoke test date ranges have expired before completion.
- D. The Contractor shall alert the appropriate County personnel of their work locations on a daily basis.
- E. Excess smoke emitting from the blower can cause a traffic hazard and can obscure the field of view for nearby traffic. Smoke testing may need to be halted until sewer lines can be cleaned or testing can be performed at low flow periods of the day.
- F. Contractor will provide and place "Right-of-Way" signs in prominent locations where testing is planned 24-hours in advance of commencing the test/s. Signs will be a minimum of 24 inches wide by 18 inches high with letters a minimum of 2 inches high. Signs will be supported a minimum of 12 inches above grade by integral metal frames. Wording on the signs shall be similar to the following:

**SEWER SMOKE TESTING WILL BE CONDUCTED ON "date" and "time". Contact "person" with "company" at "phone number" for additional information.**

### 3.5 DELIVERABLES

- A. Electronic database and digital photographs of the test results shall be submitted to the County. The electronic database, using the required file format, shall be tied to the County's

GIS sewer maps through the manhole and pipe facility ID numbers.

- B. A D-ring binder with hard copies of the test results including photographs shall be submitted to the County.
- C. A sample database must be submitted for approval and approved prior to any smoke testing field work beginning.
- D. All photographs shall be digital pictures in electronic format.
- E. Data Collection Methods: Electronic data must be delivered in the prescribed method for uploading to the County's Computerized Maintenance Management System (CMMS). However, the Contractor may use whatever method he chooses to collect the data. Electronic copies of blank data tables will be provided to Contractor at the Kick-Off Meeting.

### 3.6 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
- B. The system shall be such that the accuracy of reporting is a function of:
  - 1. The number of faults not recorded (omissions).
  - 2. The correctness of the coding and classification of each fault recorded.
- C. The minimum levels of accuracy to be attained under the various survey headings are as follows:
  - 1. Assessment Accuracy 95%
  - 2. GPS Accuracy 98%
- D. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- E. The data submissions shall undergo a series of review checks for Quality when submitted to the County. Should accuracy levels fall below the standards outlined, the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until the required levels of accuracy is reached. Continuous data submittal refusals for quality under the required levels of accuracy will constitute cause for dismissal.

**\*\*END OF SECTION\*\***

## SECTION SSR 7 – SURVEY

### PART 1- GENERAL

#### 1.1 WORK THIS SECTION

- A. The purpose of this work is to establish the position (location) of various items, as directed by the County, using Global Positioning System (GPS). Only one level of GPS accuracy will be utilized. Survey grade GPS will be +/- 0.1-foot accuracy. On all surveys the X, Y, and Z position coordinates will be provided.
- B. Typically the following items will be located:
  - 1. Manholes and pipes – survey grade
  - 2. Gravity sewer flow meter – survey grade
  - 3. Rainfall gauge – survey grade
  - 4. Piezometer – survey grade
  - 5. Smoke tested defect – mapping grade
  - 6. Dye water application – mapping grade
  - 7. Dye tested defect – mapping grade
  - 8. Critical Crossings- mapping grade

#### 1.2 REFERENCES

- A. Codes, Specifications, and Standards (None Cited)
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Gwinnett County Department of Water Resources, Information Applicable to Infiltration/Inflow Projects
- F. Related sections of the Sewer System Rehabilitation Specifications
  - 1. Section SSR 3, Manhole Condition Assessment
  - 2. Section SSR 5, Smoke Testing
  - 3. Section SSR 24, Critical Crossing Assessment

#### 1.3 DEFINITIONS (None Cited)

#### 1.4 EXPERIENCE

- F. Supervisor of the field crews shall have received proper training in this function and have a minimum of five (5) years of experience in performing such assignments including safe working practices, confined space safety procedures, the types of equipment being used, product/materials being used, etc.

- G. Field crew leaders shall have received proper training in this function and have a minimum of three (3) years of experience in performing such assignments including safe working practices, confined space safety procedures, the types of equipment being used, product/materials being used, etc.
- H. The Contractor shall not employ any procedure or utilize any equipment that the Contractor's personnel do not have the above stated minimum experience with.
- I. All other crewmembers shall have received proper training in this assignment and have a minimum of one (1) year experience.
- J. The Contractor shall provide the County with written documentation that the supervisor, crew leader/s and all crewmembers responsible for such assignments have received the proper training and where required the requisite experience.

#### 1.5 REFERENCE COORDINATE SYSTEM

- A. The Contractor will provide x, y, and z coordinates, including invert elevations (rim to invert)
  - 1. The following datum shall be used for each coordinate value:
    - a. Horizontal: Georgia State Plane (West Zone/1002) in the NAD 83(94) projection
    - b. Vertical: North American Vertical Datum of 1988 (NAVD 88)
  - 2. These coordinates will be tied to the existing Gwinnett County Control network.
  - 3. The procedures used to collect the data will be utilized so that the precision of the measurements shall meet the tolerance (+/- 0.1-foot +/-3.0-feet) as specified by the County for each item to be located.
  - 4. The point of measurement on each item shall be indicated by a dot of green paint.
- B. The Consultant shall use a combination of conventional surveying (EDM) and GPS methods to collect the data. The project will be controlled using the existing Gwinnett County Control network and will be complimented (additional points will be added) as needed to ensure that the required project accuracy standards will be attained.
  - 1. In suitable areas a GPS rapid static method will be utilized to collect the data. Three (3) dual frequency GPS receivers will be used - one receiver will serve as the base station and two units will be used as rovers. Each data point will be occupied for no less than five (5) minutes on two separate occasions. Invert elevations will be obtained using a level rod and a clinometer. The clinometer will be used to compensate for the slope of the rod.
  - 2. In areas that are unsuitable for GPS measurement, conventional surveying methods will be used to collect the data. Total stations will be used to obtain the data points. Invert elevations will be obtained using a vector data collection method that will account for the slope of the rod automatically.

#### 1.6 PROVIDED BY COUNTY

- A. The County will provide the Contractor with the following:
  - 1. An electronic base map that will include the County Facility ID Numbers, when applicable, of the items to be surveyed. This shall be GIS personal geodatabase or shape

files.

#### 1.7 DATA ACCURACY

- A. Calibration shall be carried out at least on a daily basis in accordance with the GPS equipment manufacturer's instructions. Additional calibrations may be required during the course of the working day for large fluctuations of temperature and/or humidity, also in accordance with the manufacturer's instructions and tolerances. The accuracy of the coordinates shall be +/- 0.1-foot as directed by the County.

#### 1.8 MEASUREMENT AND PAYMENT

- A. Payment for survey grade GPS of asset location will be paid at the unit price bid. Survey grade GPS shall be per each asset located. Payment will be full compensation for furnishing all labor, tools, traffic control, and equipment necessary to perform all work in accordance with this SSR. Payment for survey grade GPS of asset locates shall be made under GPS/Mapping, GPS Asset Location, per each.

#### PART 2-PRODUCTS/EQUIPMENT

- A. It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must provide all equipment required to comply with the regulations and guidelines.

#### Part 3-EXECUTION

##### 3.1 GENERAL

- A. The Contractor shall furnish all labor, tools, traffic control, materials, software and equipment necessary for capturing the position of all items specified.

##### 3.2 PREPARATION

- A. Scheduling: Contractor shall plan the collection of GPS data, using the appropriate software, to optimize the accuracy and speed of data collection while minimizing the impact and interference on traffic and other activities.

##### 3.3 DOCUMENTATION OF DATA

- A. A Microsoft Excel file for manhole locates will include the following attributes: the Facility ID of the manhole, all pipe Facility IDs, the address, a street or creek name in the vicinity of the subject item, and the X, Y and Z coordinates of the manhole and all mains. Contractor shall deliver data in the format as outlined in the DWR GIS data dictionary. Filename SEWERCONTRACTORS.ddf.
- B. Manholes will be located at the center of the manhole cover.
- C. The Contractor shall enter a "temporary Facility ID" for all manholes using numeric value. The manhole fields shall match the "GPS Manhole" fields in GIS. The Contractor shall check GPS manholes to match to existing GIS manholes and enter the GIS "Facility ID" into the field data. If there are discrepancies then the site needs to be revisited to insure that all manholes are captured. For manholes that are found that are not in the GIS map, then use the "temporary facility ID" and leave the GIS "Facility ID" value zero (0). (All temporary Facility

ID's assigned must be numeric).

- D. A Microsoft Excel file for rainfall gauges will include the following attributes: a rainfall gauge name, the address and/or pump station name where the gauge is located, the type of rainfall gauge (tipping bucket, i.e.), the gauge manufacturer, the existing ground elevation, description of where and on what the gauge is located, the elevation of the top of the gauge and the date of its installation.
- E. A Microsoft Excel file for In-Manhole groundwater piezometer will include the following attributes: the Facility ID of the manhole, all Pipe Facility IDs, the address, a street or creek name in the vicinity of the subject manhole, and the X, Y and Z coordinates of the manhole and all mains, description of the piezometer construction, Z coordinate of the piezometer's pressure transducer.
- F. A Microsoft Excel file for Stand-Alone groundwater piezometer will include the following attributes: the Facility ID of the manhole the piezometer is located adjacent to, all pipe Facility IDs, the address, a street or creek name in the vicinity of the subject manhole, and the X, Y and Z coordinates of the manhole and all mains, description of the piezometer construction, the X, Y and Z coordinates of the piezometer, Z coordinate of the piezometer's pressure transducer.

#### 3.4 DELIVERABLES

- A. Excel Data Files as indicted above.
- B. Corrections to the base map will be illustrated on a printed copy of the base map with red markings and delivered to the County on regular intervals as directed by the County. Supplemental sketches will be provided, as necessary, to clearly depict the actual site conditions.
- C. Coordinate and attribute data will be provided to the Contractor electronically as a personal geodatabase or shape files.

#### 3.5 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
- B. The minimum level of accuracy to be attained under the various recorded points is 98%.
- C. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- D. The data submissions shall undergo the same review checks for Quality when submitted to the County. Should accuracy levels fall below 90%, the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until 98% level of accuracy is reached. Continuous data submittal refusals for quality under 98% will constitute cause for dismissal.

**\*\*END OF SECTION\*\***

## **SECTION SSR 10 – WASTEWATER FLOW CONTROL**

### **PART 1- GENERAL**

#### **1.1 WORK THIS SECTION**

- A. The purpose of this section is to define the various methods of wastewater flow control including plugging/blocking and bypass/diversion pumping. Wastewater flow control shall maintain an efficient and uninterrupted level of service to the sewer system while investigative or construction operations (including rehabilitations, repair or replacement) are performed.

#### **1.2 REFERENCES**

- A. Codes, Specifications and Standards (None cited)
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Gwinnett County Department of Water Resources, Information Applicable to Infiltrations/Inflow Projects
- F. Related sections of the Sewer System Rehabilitation Specifications
  1. Section SSR 1, Sanitary Sewer Television/Sonar Inspection
  2. Section SSR 2, Sanitary Sewer Cleaning
  3. Section SSR 21, Overflows and Spills

#### **1.3 DEFINITIONS (None Cited)**

#### **1.4 EXPERIENCE**

- A. The Contractor must meet all of the following criteria to be considered qualified:
  1. The Contractor, or their subcontractor, must document that they, not their parent company or related company or the experience of an individual/s, have been in this line of business a minimum of five (5) years.
  2. The Contractor, or their subcontractor, must document that they, not their parent company or related company or the experience of an individual/s, have performed gravity sewer bypass/diversion pumping for the sizes of sewer mains and flows expected under this contract in the past two (2) years. This documentation shall include locations, references (including names and phone numbers), pipe sizes, pump sizes and pumping rates. This documentation must include a minimum of ten (10) different projects and must cover the range of sizes of sewer mains and flows expected under this contract.
- B. Experience documentation will be submitted as a part of all bids. The Contractor shall provide the County with written documentation that the supervisor and field crew leaders responsible for this work have received the proper training, are certified, and have the requisite experience. This documentation will include dates of hands-on experience,



employer, description of duties/experience, contact name and phone number. Documentation on any person shall not be longer than 1-page.

- C. Supervisor of the field crews must be properly trained in this function and have a minimum of five (5) years experience in performing gravity sewer bypass/diversion pumping including safe working practices, the types of equipment and the operation of the equipment that will be used for this contract.
- D. Field crew leaders must be properly trained in the function and have a minimum of three (3) years hands-on experience in performing bypass/diversion pumping including safe working practices, the types of equipment and the operation of the equipment that will be used for this contract.
- E. No crewmembers shall enter confined spaces without the necessary certified training.

#### 1.5 PERSONNEL

- A. The Supervisor must daily visit the project site checking on their personnel and subcontractors, meeting with the field crew leaders as well as checking on the status and progress of the project.
- B. A field crew leader must be with their crew when their crew is working. Each field crew leader can only have one crew. Each crew must have its own field crew leader.

#### 1.6 SUBMITTALS

- A. Seven (7) calendar days prior to any bypass/diversion pumping activity the Contractor shall submit six (6) copies of the complete and detailed plan to the County for review. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The Contractor may submit a general bypass/diversion pumping plan that will be used when bypassing sewer mains 8-inch diameter and smaller. Once the Contractor has received written approval from the County for this 8-inch diameter and smaller sewer main plan the Contractor may use that plan without re-submittal.
- B. The bypass/diversion pumping plan submittal shall have sufficient detail to show the following:
  - 1. Lowest overflow point upstream of the bypass/diversion.
  - 2. Pump stations upstream of the bypass/diversion.
  - 3. Staging area for pumps
  - 4. Sewer plugging method and types of plugs
  - 5. Number, size, material, location and method of installation of suction piping
  - 6. Number, size, material, location and method of installation of discharge piping
  - 7. Bypass pump sizes, capacity, number of each size to be onsite and the power requirements
  - 8. System curve design calculations detailing the static lift, friction losses, velocity losses and flow velocities.
  - 9. Pump curves with the system curves plotted showing the pump operation range

and confirming the pump size, horsepower and impeller required

10. Standby power generator size and location, if utilized
  11. Noise control and abatement measures
  12. Downstream discharge plan including pipe routing plan and profile views
  13. Sections showing suction and discharge pipe depth, embedment, joint restraints, thrust blocking and backfilling
  14. Method of protecting discharge manholes or structures from erosion and damage
  15. Location and position, in detail, where pipes cross roadways and driveways
- C. For bypass plans associated with twelve (12) inch or larger sewer mains a Professional Engineer must sign and seal the bypass/diversion plan.
- D. The Contractor will provide an emergency response plan for each bypass/diversion pumping. The plan will be followed in the event of failure of the bypass/diversion pumping system.
- E. The Contractor must identify all pump stations and the lowest overflow point upstream of the plugging/block and/or bypass/diversion pumping. The Contractor may be required to station personnel at upstream pump stations and overflow points.
- F. The Contractor shall notify the County 48 hours prior to commencing any plugging/block and/or bypass/diversion pumping.

#### 1.7 MEASUREMENT AND PAYMENT

- A. No separate payment will be made for the wastewater flow control method of plugging/blocking. The work and materials being considered as incidental to and part of other unit bid prices.
- B. No separate measurement or payment will be made for the wastewater flow control associated with cured-in-place pipe (CIPP). The work and materials being considered as incidental to and part of CIPP unit prices.
- C. No separate measurement or payment will be made for Contractor personnel that maybe required monitoring pump stations and/or overflowing points upstream of any plugging/block and/or bypass/diversion pumping. The work, materials and personnel being considered as incidental to plugging/blocking operations and bypass/diversion pumping unit prices.
- D. Payment for bypass/diversion pumping shall be made at the unit price bid. Bypass/diversion pumping shall be measured by the following methods and payment will be full compensation for furnishing all labor, tools, fuels, maintenance, traffic control, and equipment necessary to perform all work in accordance with this SSR:
1. Payment for bypass pump setup shall be made under Bypass Pumping, Set up for pump size(inches), per each
  2. Payment for bypass pump discharge line shall be made under Bypass Pumping, Discharge Line for Pump Size (inches), per linear foot.

3. Payment of bypass pump operation shall be made under Bypass Pumping , Operation of Pump Size( inches), per hour.

## PART 2 PRODUCTS

### 2.1 PIPE FOR FLOW DIVERSION

- A. Steel pipe is permitted for flow diversion.
- B. Polyethylene Pipe is permitted for flow diversion. Polyethylene material shall comply with the requirements for Type III polyethylene, C-S and P-34 as tabulated in ASTM D-1248 and has the Plastic Pipe Institute recommended designation PE3406. The material shall also have an average

specific base resin density of between 0.94 g/cc and 0.955 g/cc (ASTM D-1505). Pipe made from these resins must have a long-term strength (50 years) rating of 1,250 psi or more per hydrostatic design basis categories of ASTM D-2837. The polyethylene resin shall contain antioxidants and be stabilized against ultraviolet degradation to provide protection during processing and subsequent weather exposure. The polyethylene resin shall have an environmental stress crack resistance; condition C as shown in ASTM D-1693, to be greater than

500 hours, 20% failure. All pipes shall be made from virgin quality material. No rework compound, except that obtained from the manufacturer's own production of the same formulation shall be used. The polyethylene resin shall have an average melt flow index, condition E as shown in ASTM D-1238, not in excess of 0.25 g/10 mm. Pipe shall be homogeneous throughout, and free of visible cracks, holes, foreign material, blisters, or other deleterious faults. Diameters and wall thickness shall be measured in accordance with ASTM D- 2122. Pipe joining will be done by thermal butt fusion method in accordance with ASTM D-2657.

- C. Polyvinylchloride (PVC) pipe is permitted for flow diversion. PVC pipe shall be rigid and securely coupled with a minimum number of connections. Glued PVC is not allowed.
- D. Irrigation type piping is not allowed.
- E. No more than two (2) pump discharge hoses will be allowed at any given time. The length of these hoses shall be limited at the direction of the County.
- F. The Contractor, at a minimum, shall design all piping, joints and accessories to withstand twice the maximum operating pressure or 100 psi whichever is greater.
- G. If required the Contractor must provide air relief (air relief valves, etc) on bypass/diversion pumping discharge piping to insure proper operation.

## PART 3- EXECUTION

### 3.1 GENERAL

- A. Prior to commencing each bypass/diversion pumping activity the Contractor must receive written approval from the County.
- B. Ensure all levels of sewage flow are continuously and effectively handled.

- C. The Contractor shall use ingenuity and skill to develop a bypass/diversion pumping plan.
- D. The back-up pump, appropriate piping, fuel, lubrication and spare parts shall be incorporated into the bypass/diversion pumping arrangement at the site, ready for use in case of a breakdown.
- E. At no cost to the County, the Contractor will carry out a "trial run" of the bypass/diversion arrangement on all sewers greater than 12-inches. This trial run must be conducted before the County will accept the arrangement. The "trial run" shall demonstrate the incorporation of all standby equipment to handle flows when the main pump set is switched off.
- F. All materials used for bypass/diversion pumping shall be pre-approved by the County prior to commencing pumping activities.
- G. When wastewater flows at the upstream manhole of the sewer main being televised are above the maximum allowable requirements for television inspection, or do not allow the proper sewer  
  
or manhole repair, the flows shall be reduced to the levels required by one of the following methods: plugging/blocking or bypass/diversion pumping of the flows, as approved by the County.
- H. In some applications, the wastewater flow may be plugged/blocked and contained within the capacity of the collection system. This shall only be done when it has been determined by the Contractor and approved by the County that the system can accommodate the surcharging without any adverse impact.
- I. When a sanitary sewer is being rehabilitated or replaced, the Contractor, at his own expense and at no cost to the County, shall provide and maintain temporary outlets and connections for all private or public service laterals connected to or served by the sewer main being rehabilitated or replaced, and where necessary, shall provide adequate pumping facilities; and shall maintain these services until such time as the permanent sewers and connections are installed and in service.
- J. During construction, flows in sections of the existing sewer being rehabilitated by removal and replacement shall be accommodated by plugging/blocking or bypass/diversion pumping.
- K. The plan must keep the wastewater flowing without discharge or spills into any adjacent creeks or on to the ground. The Contractor will seek and obtain inspection of each section of newly laid sewer before removing the flow diversion from service and placing the newly installed or rehabilitated section into service.
- L. In sections of the existing sewer being rehabilitated by laying a new line parallel to the existing sewer, the existing sewer may be used to accommodate the existing flow, and no bypass/diversion pumping will be necessary if the existing sewer is not damaged or its use restricted by the Contractor's operations.
- M. All pipe materials utilized in wastewater flow control shall be in good condition, and free of defects, and leaks. The Contractor at no cost to the County shall replace any defective material. Upon completion of the job, wastewater flow control materials shall be removed

from the site.

### 3.2 DEPTH OF FLOW

- A. In performing television inspection, joint testing, and/or sealing and other sewer rehabilitation work, the Contractor shall control the depth of flow in the sewer within the following guidelines:

<b>Maximum Pipe Flow Depth Television Inspection</b>		<b>Joint Testing and Sealing</b>	
<b>Pipe Size</b>	<b>% Pipe Dia.</b>	<b>Pipe Size</b>	<b>% Pipe Dia.</b>
6"-12"	10	6"-12"	20
15"-24"	10	15"-24"	25
27" or larger	10	27" or larger	25

- i. When sewer line flows, as measured in the first manhole upstream of the sewer segment being rehabilitated, exceed the maximum depth listed above or inspection of the complete pipe periphery is necessary for effective testing, sealing, or line work, the Contractor shall implement wastewater flow control methods. The implementation of the flow control method shall be reviewed and approved by the County.

### 3.3 PLUGGING AND BLOCKING

- A. The Contractor shall insert a sewer line plug into the line at a manhole upstream from the section being inspected or repaired. The plug shall be so designed that all or any portion of the operation flow can be released. Flows shall be shut off or reduced to within the maximum flow limits specified. Wastewater flow shall be restored to normal following completion of work.

### 3.4 BYPASS/DIVERSION PUMPING

- A. When bypass/diversion pumping is required, a pump size shall be recommended by the Contractor and approved by the County. The Contractor shall supply the necessary pumps, conduits, and other equipment to divert the flow of wastewater around the sewer section in which the work is to be performed. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of rainstorms as indicated from the flow monitoring program. The Contractor shall be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system. A "setup" consists of the necessary pumps, conduits, and other equipment required to divert the flow of wastewater from the start to finish of work performed.
- B. Wastewater shall be pumped directly into the nearest available downstream manhole, provided that the existing sewer has capacity to transport the flow. The Contractor shall request the County to determine the capacity of the downstream existing system. The Contractor shall request this determination fourteen (14) calendar days prior to the planned bypass/diversion pumping.
- C. The Contractor shall be responsible for keeping the pumps running continuously 24 hours a day, if required, until the bypass operation is no longer required. The Contractor shall have standby pumps at all times.

- D. Maintenance personnel capable of starting, stopping, refueling, and maintaining the pumps and equipment during the bypass/diversion pumping operation shall continuously monitor pumps and equipment. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum.

### 3.5 FLOW CONTROL PRECAUTIONS

- A. Where the wastewater flow is plugged/blocked, the Contractor shall be responsible for taking sufficient precautions to protect public health. The sewer lines shall also be protected from damage. The following shall apply:
  - 1. No wastewater shall be allowed to back up into any homes or buildings.
  - 2. No wastewater shall overflow any manholes, cleanouts, or any other outlet.
  - 3. Customers upstream of the flow control area shall be able to use all their water and sewer utilities without interruption.
  - 4. If any of the above occur or are expected to occur, the Contractor shall provide bypass/diversion pumping to alleviate one or all of the conditions. Additionally, the Contractor shall observe the conditions upstream of the plug and be prepared to immediately start bypass/diversion pumping, if needed.
- B. Any sump pumps, bypass pumps, trash pumps, or any other type of pump, which pulls wastewater or any type of material out of the manhole or sewer, shall discharge the material into another manhole, or appropriate vehicle or container approved by the County. **Under no circumstances shall this material be discharged, stored, or deposited on the ground, storm water system, swale, road, or open environment.**
- C. The Contractor shall take appropriate steps to ensure that all pumps, piping, and hoses that carry raw wastewater are protected from traffic. Traffic control shall be performed in accordance with the requirements of the governing agency.
- D. Prior to any wastewater flow control operations the Contractor will identify the pump station/s and lowest overflow point upstream of the planned plugging/blocking or bypass/diversion. During operations the Contractor will monitor the pump stations and lowest points to ensure overflow does not occur.
- E. In the event, during any form of "Wastewater Flow Control," that raw wastewater is spilled, discharged, leaked, or otherwise deposited in the open environment the Contractor shall be responsible for any cleanup of solids and stabilization of the area affected. This work shall be performed at the Contractor's expense with no additional cost to the County. The Contractor shall also be responsible for notifying the County's sewer system maintenance personnel and complying with any and all regulatory requirements for cleaning up the spill at no additional cost to the County.
- F. During wastewater flow control operations; the Contractor shall take proper precautions to prevent damage to existing sanitary sewer facilities, flooding, or damage to public or private property.
- G. The Contractor shall make repairs, replacements or rebuilds, as directed by the County, to any portion of the sewer system damaged during any plugging or bypass/diversion

pumping operation. All such repairs, replacements, and rebuilding shall be paid for by the Contractor.

- H. The Contractor shall make such provisions as are necessary for handling all flows in existing sewers, connections, and manholes by pipes, flumes, or by other approved methods at all times, when his operations would, in anyway, interfere with normal functioning of those facilities.
- I. The Contractor shall be responsible for the removal of any debris and sedimentation in the existing sewers, laterals, and manholes, etc., which is attributable to his work under this Contract. The Contractor is responsible for the proper disposal of these items.
- J. The Contractor in strict accordance with OSHA and any applicable local safety requirements shall perform all operations. Particular attention is directed to safety regulations for excavations and entering confined spaces.
- K. It is the Contractor's responsibility to notify in writing any property owner and/or resident having a sewer service connection on the sewer being rehabilitated or replaced. The Contractor shall notify property owners 24 to 72 hours prior to commencing sewer rehabilitation or replacement. The Contractor shall be solely responsible for any damage caused by property service connection backups caused by the sewer rehabilitation operations.

**\*\*END OF SECTION\*\***

## **SECTION SSR 21 – OVERFLOWS AND SPILLS**

### **PART 1- GENERAL**

#### **1.1 WORK THIS SECTION**

The purpose of this section is to define the responsibilities for overflows and spills.

#### **1.2 REFERENCES**

- A. Codes, Specifications, and Standards (None Cited)
- B. Testing and Materials Standards (None Cited)
- C. Specifications for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County Related sections of the System Specifications
  - 1. Section SSR 1, SSR 1\_Sanitary Sewer and Television-Sonar Inspection
  - 2. Section SSR 2, SSR 2\_Sanitary Sewer and Cleaning
  - 3. Section SSR 3, SSR 3\_Manhole Condition Assessment
  - 4. Section SSR 7, SSR 7\_Survey
  - 5. Section SSR 10, SSR 10\_Wastewater Flow Control
  - 6. Section SSR 21, SSR 21\_Overflows and Spills

#### **1.3 DEFINITIONS (None Cited)**

#### **1.1 MEASUREMENT AND PAYMENT**

No payment will be made for overflow and spills. The cost of overflows and spills will be borne entirely by the Contractor.

### **PART 2 – PRODUCTS/EQUIPMENT (None Cited) PART 3- EXECUTION**

#### **3.1 GENERAL**

- A. It shall be the responsibility of the Contractor to schedule and perform his work to result in no overflows or spills of sewage or combined sewage from the system. If sewage flows are such that they interfere with the Contractor's ability to perform work, the Contractor shall be responsible for scheduling his work during low flow periods or provide bypass pumping. Bypass pumping shall be provided only with the specific written approval of the County.
- B. In the event of overflows caused by the Contractor's work activities, the Contractor shall immediately take appropriate action, in accordance with the County's Emergency Response Plan (ERP), to contain and stop the overflow, clean up the spillage, disinfect the area affected by the spill, and notify the County in a timely manner. Copies of the ERP are available at DWR. The Contractor shall prepare his own written Standard Operating Procedure (SOP) for handling and reporting spills, which shall be compatible with the County's ERP.
- C. Contractor will indemnify and hold harmless the County for any fines or third-party claims for personal or property damage arising from a spill or overflow that is fully or partially the responsibility of the Contractor. Should fines be imposed because of any overflow for which the Contractor is fully or partially responsible, the Contractor shall pay all such fines and all of the



County's legal, engineering, and administrative costs in defending such fines and claims associated with the overflow

- D. In the event that wastewater is overflowed, spilled, discharged, leaked, backed up, or otherwise released, whether fully or partially due to the Contractor's work, the Contractor shall be responsible for the cleanup. This cleanup shall be performed at the Contractor's expense with no additional cost to the County. The Contractor shall also be responsible for notifying the County's sewer system maintenance personnel and complying with any and all regulatory requirements for cleaning up the spill at no additional cost to the County.
- E. Contractor will be responsible for providing full reporting of the spill, not limited to the information below:
  - 1. Impacted Pipe Facility ID
  - 2. Status
  - 3. Date
  - 4. Reported By:
  - 5. Street Address
  - 6. Cross Street
  - 7. Location
  - 8. Overflow Start Time
  - 9. Overflow End Time
  - 10. Overflow Source
  - 11. Facility ID of Overflow Structures
  - 12. Est. GPM
  - 13. Est. Minutes
  - 14. Est. Gallons
  - 15. Containment Method 1
  - 16. Containment Method 2
  - 17. Sign posted?
  - 18. Cleanup Method 1
  - 19. Cleanup Method 2
  - 20. Disposal Method
  - 21. Gal. Recovered
  - 22. Property Owner
  - 23. Owner Satisfied?
  - 24. Reason for Overflow

**\*\*END OF SECTION\*\***

## **SECTION SSR 24 – CRITICAL CROSSING CONDITION ASSESSMENT**

### **PART 1- GENERAL**

#### **1.1 WORK THIS SECTION**

The purpose of Critical Crossings assessment (CCA) is to locate a pipe segment under a traffic source or water source, document its physical dimensions, materials, structural condition, and maintenance concerns. Crossing inspection assessments will be conducted on every Critical line segment in the project basin, unless otherwise noted.

#### **1.2 REFERENCES**

- A. Codes, Specifications, and Standards
  - NASSCO – National Association of Sewer Service Companies
- B. Testing and Materials Standards (None Cited)
- C. Specification for Construction of Sewer Mains, Gwinnett County Department of Water Resources
- D. General Conditions for Gwinnett County Construction Contracts, Gwinnett County
- E. Related sections of the Sewer System Rehabilitation Specifications
  - 1. Section SSR 1, SSR 1\_Sanitary Sewer Television/Sonar Inspection
  - 2. Section SSR 2, SSR 2\_Sanitary Sewer Cleaning
  - 3. Section SSR 3, SSR 3\_Manhole Condition Assessment
  - 4. Section SSR 7, SSR 7\_Survey
  - 5. Section SSR 10, SSR 10\_Wastewater Flow Control
  - 6. Section SSR 21, SSR 21\_Overflows and Spills

#### **1.3 DEFINITIONS**

Critical Crossing: A pipeline that runs under busy streets, railroads, or creek crossings or is raised to span waterways.

#### **1.4 EXPERIENCE**

- A. Supervisor of the field crews performing these functions shall have the proper training in the types of equipment and monitoring functions associated with field inspection and evaluation of sewers and shall have a minimum of three (3) years of experience in performing such assignments including safe work practices, etc.
- B. The Data Manager performing these functions shall have MACP certification and the proper training in these types of data management and monitoring functions and shall have a minimum of three (3) years of experience in performing such assignments including quality review processes, etc.
- C. Field crew leaders performing these functions shall have the proper training in the types of equipment and monitoring functions associated with field inspection and evaluation of sewers and shall have a minimum of one (1) year experience in performing such assignments including safe working practices, etc.
- D. The Contractor shall provide the County with written documentation (certification) that the supervisor, field crew leader and all crewmembers responsible for these assignments have the proper training and the requisite experience.

F. The required experience shall be documented in the Contractor's Bid submittal.

#### 1.5 MEASUREMENT AND PAYMENT

Payment for crossing assessment inspections shall be made at the unit price bid. Crossing assessment inspections shall be per each site inspected. Payment will be full compensation for furnishing all labor, tools, traffic control and equipment necessary to perform all work in accordance with this SSR. Payment for crossing inspection assessments shall be made under Inspection Services, Critical Crossing Assessment, per each.

#### PART 2- PRODUCTS/EQUIPMENT

- A. Digital photographs shall be taken with a 3.0 mega pixel color camera, minimum.
- B. The camera shall be equipped with an optic telephoto lens with sufficient magnification that the effects of pixelization do not degrade the farthest image.
- C. The light source will be adjustable to allow an even distribution of light around the sewer and manhole perimeter without loss of contrast, flare out of picture, or shadowing.
- D. It is the responsibility of the Contractor to comply with OSHA regulations, the County's Safety Guidelines, and the County's Confined Space Guidelines as applicable. The Contractor must provide all equipment required to comply with the regulations and guidelines.
- E. The Contractor shall provide all labor, material, supplies, equipment, transportation, traffic control, etc., necessary to complete the crossing inspections assessments.

#### PART 3 - EXECUTION

##### 3.1 GENERAL

- A. Crossings to be assessed:
  - 1. The County will supply a base map of the sewer system to be investigated showing the extent of GIS data available regarding the sewer layout. Additional crossings may be encountered during the field operations.
  - 2. Prior to initiating field operations, the Contractor shall identify all designated crossing locations on the sewer systems to be assessed and confirm the asset-referencing system to be used throughout the survey and for all subsequent reporting.
    - a. The Contractor shall inspect and record both mapped and unmapped crossings, including any buried and unburied locations identified during the execution of the field work, in addition to known locations.
  - 3. For pipe spans without a pre-assigned facility ID number the contractor shall assign a temporary unique identifier numbers for the Upstream Manhole, Downstream Manhole and Pipe segment from a series assigned by the County.
  - 4. Inspection data shall be submitted to the county following the format laid out in the Crossing Inspection Form and database. Digital data and high resolution digital photographs will be delivered to the County on CD, DVD, or external hard drives as directed by the Contract manager.
  - 5. Digital photographs shall be named in the following format:

**XING\_PipeFacID\_Date\_Sequential#.jpg;**

6. The locations of crossings shall be located in the field by the Contractor through the use of survey grade GPS. This will be billed in addition to the inspection.
7. The Contractor shall take digital photos as described in this section, complete the assessment report, make map verifications, and record map corrections as necessary.

**3.2 DOCUMENTATION**

- A. The Contractor shall deliver completed copies of the inspection forms included in this section in both electronic and paper formats for all crossings inspected. The electronic data submitted shall include all text, updated maps and digital photos as required to fully capture the results of the inspection and evaluation. Submitted data shall not be considered as complete unless it includes the inspection forms and supporting documentation for the upstream and downstream manholes and the crossing pipe.
- B. Description of the physical characteristics of the crossing location.
  1. Road Name and agency with jurisdiction, number of lanes, condition of shoulder areas, on or off ramps, retaining walls or other structural barriers to access, medians, sidewalks, encroaching or adjacent structures etc.
  2. Stream name, condition of stream buffers, condition of stream banks, description of stream bed, width and depth of flow, length of aerial section and location of any support piers, erosion issues at the crossing, accessibility constraints, adjacent structures, etc.
- C. Contractor shall document the names of the Crews providing the work, inspection equipment, and GPS equipment used to capture manhole locations in the field including a full description of signal strength, output from the unit, etc to the satisfaction of the Contract manager.

**3.3 PHOTOGRAPHIC DOCUMENTATION PROCEDURES**

- A. A set of high-resolution digital color photographs shall be taken for each crossing assessed.
- B. A minimum of two pictures should be taken. These pictures should display the surface conditions at the pipe span and include sufficient background to allow a person to identify the location of the crossing based on the photographs and address in the case of a road crossing. The photos should present the general nature of the crossing. A photo should be taken from both ends of the pipe crossing facing toward the crossing.
- C. In the case of a stream crossing, it may be necessary to provide multiple photos in each direction and photos perpendicular to the crossing to capture the nature of the stream banks and the conditions in the stream itself. Careful documentation will be required in these cases to ensure the photos are adequately labeled and described such that they can be associated to specific aspects of the crossing.
- D. Any structural defects, evidence of erosion, obstructions, etc. should be photographed and documented.

**3.4 DELIVERABLES**

- A. Electronic database with inventory and condition data, along with photographs of each shall be submitted to the County. The electronic database, using the required file format shall reflect the County GIS sewer maps through the Manhole and Pipe facility ID numbers.

- B. Data Collection Methods: Electronic data must be delivered in the prescribed method for uploading to the County's Maintenance Management System (MMS). However, the Contractor may use whatever method he chooses to collect the data. Electronic copies of blank data tables will be provided to Contractor at the Project – Kickoff Meeting.
- C. The Crossing Inspection Assessment form must be delivered in the County's MMS format.

### 3.5 QUALITY CONTROL PROCEDURES

- A. The Contractor shall operate a quality control system, which will effectively gauge the accuracy of all survey reports produced by the operator.
  - 1. The system shall be such that the accuracy of reporting is a function particularly of:
    - a. The number of faults not recorded (omissions).
    - b. The correctness of the coding and classification of each fault recorded.
- B. The minimum levels of accuracy to be attained under the various survey headings are as follows:
  - 1. Inspection Accuracy 95%
  - 2. GPS Accuracy 98%
- C. The Contractor shall perform this QA/QC analysis on all data recorded before the data is submitted to the County. The Contractor shall provide a summary report of the results of the Quality Assurance analysis with each data submission.
- D. The data submissions shall undergo a series of review checks for Quality when submitted to the County. Should accuracy levels fall below the standards outlined, the data submittal will be refused and no payment will be released. Contractor will be required to correct or re-do inspections until the required levels of accuracy is reached. Continuous data submittal refusals for quality under the required levels of accuracy will constitute cause for dismissal.

### 3.6 COLLAPSING MANHOLES, COLLAPSING PIPES

- A. Any manhole or pipe span with severely compromised structural integrity and posing a hazard or threat of personal injury to the public must be reported to the County immediately for remedial action. Written confirmation of the report, including all details of the defect/hazard shall be made to the County within 24 hours of the discovery of the problem.
- B. The Contractor must protect any manhole or pipe crossing with conditions that pose a threat of personal injury to the public until the County arrives at the job site.

**\*\*END OF SECTION\*\***

# **GENERAL FORMS APPLYING TO BOTH SECTIONS**

FAILURE TO RETURN THIS PAGE AS PART OF BID DOCUMENT MAY RESULT IN REJECTION OF BID

REFERENCES/EXPERIENCE/REQUIREMENTS OF THE CONTRACTOR

Gwinnett County requests a minimum of three (3) to five, (5) detailed references where work of a similar size and scope has been completed within the last 7 years. \*Experience with structure assessments, pipeline inspections, and CCTV inspections is required and should be clearly detailed below. References provided should clearly demonstrate Contractor’s ability to provide services as outlined in this request for bid. Failure to provide reference information that is correct, current and easily verifiable may result in bid being deemed non-responsive.

1. Client Name \_\_\_\_\_

Brief Description of Project/Key Objectives \_\_\_\_\_

\_\_\_\_\_

Project Outcome \_\_\_\_\_

Contractor Involvement/Role \_\_\_\_\_

\*State experience with structure assessments, pipeline assessments, and CCTV inspections (attach extra pages if needed) \_\_\_\_\_

\_\_\_\_\_

Completion Date \_\_\_\_\_ Completed Contract Value \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

2. Client Name \_\_\_\_\_

Brief Description of Project/Key Objectives \_\_\_\_\_

\_\_\_\_\_

Project Outcome \_\_\_\_\_

Contractor Involvement/Role \_\_\_\_\_

\*State experience with structure assessments, pipeline assessments, and CCTV inspections (attach extra pages if needed) \_\_\_\_\_

\_\_\_\_\_

Completion Date \_\_\_\_\_ Completed Contract Value \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Company Submitting bid \_\_\_\_\_

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REFERENCES/EXPERIENCE/REQUIREMENTS OF THE CONTRACTOR

3. Client Name \_\_\_\_\_

Brief Description of Project/Key Objectives \_\_\_\_\_

Project Outcome \_\_\_\_\_

Contractor Involvement/Role \_\_\_\_\_

\*State experience with structure assessments, pipeline assessments, and CCTV inspections (attach extra pages if needed) \_\_\_\_\_

Completion Date \_\_\_\_\_ Completed Contract Value \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

4. Client Name \_\_\_\_\_

Brief Description of Project/Key Objectives \_\_\_\_\_

Project Outcome \_\_\_\_\_

Contractor Involvement/Role \_\_\_\_\_

\*State experience with structure assessments, pipeline assessments, and CCTV inspections (attach extra pages if needed) \_\_\_\_\_

Completion Date \_\_\_\_\_ Completed Contract Value \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_



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REFERENCES/EXPERIENCE/REQUIREMENTS OF THE CONTRACTOR

1. Client Name \_\_\_\_\_

Brief Description of Project/Key Objectives \_\_\_\_\_

Project Outcome \_\_\_\_\_

Contractor Involvement/Role \_\_\_\_\_

\*State experience with structure assessments, pipeline assessments, and CCTV inspections (attach extra pages if needed) \_\_\_\_\_

Completion Date \_\_\_\_\_ Completed Contract Value \_\_\_\_\_

Contact Person \_\_\_\_\_ Telephone \_\_\_\_\_

E-Mail Address \_\_\_\_\_

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CONTRACTOR IDENTIFICATION/PROFILE AND QUALIFICATIONS OF KEY PERSONNEL

FULL LEGAL BUSINESS NAME: \_\_\_\_\_

PRINCIPAL BUSINESS OFFICE LOCATION: \_\_\_\_\_  
Street address

\_\_\_\_\_ City State Zip

E-MAIL ADDRESS: \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FEDERAL TAX ID NUMBER: \_\_\_\_\_

DOES YOUR COMPANY CURRENTLY HAVE A LOCATION WITHIN GWINNETT COUNTY? YES  NO

LIST SATELLITE OFFICES, IF ANY: \_\_\_\_\_

\_\_\_\_\_

INDICATE LOCATION(S) FROM WHICH SERVICES FOR THIS PROJECT WILL BE STAGED:

\_\_\_\_\_

LOCATION OF PROJECT OFFICE: \_\_\_\_\_

LOCATION OF PROPOSED PROJECT MANAGER: \_\_\_\_\_

\*PROJECT MANAGER'S TOTAL # YEARS OF SIMILAR EXPERIENCE: \_\_\_\_\_

\*DATA MANAGER'S TOTAL # YEARS OF SIMILAR EXPERIENCE: \_\_\_\_\_

SPECIFY \*PROJECT MANAGER'S PRIMARY ROLE ON SIMILAR PROJECT: \_\_\_\_\_

BRIEF HISTORY OF FIRM: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DESCRIBE BUSINESS ACTIVITIES: \_\_\_\_\_

\_\_\_\_\_

SIZE OF FIRM: \_\_\_\_\_ EMPLOYEES: \_\_\_\_\_

LIST OFFICERS (NAME AND TITLE): \_\_\_\_\_

_____	name	_____	title
_____	name	_____	title
_____	name	_____	title

FAILURE TO RETURN THIS PAGE AS PART OF BID DOCUMENT MAY RESULT IN REJECTION OF BID

CONTRACTOR IDENTIFICATION/PROFILE AND QUALIFICATIONS OF KEY PERSONNEL

AFFILIATES, IF ANY: \_\_\_\_\_

SUBSIDIARIES, IF ANY: \_\_\_\_\_

OWNERSHIP: \_\_\_\_\_

OTHER CORPORATE DATA AS DEEMED PERTINENT: Project teams are acceptable, provided a single firm or entity is designated as the lead Respondent with overall project accountability. If an association with other firms or entities is proposed, describe the working relationship, identify specific areas of responsibility of each firm, and identify the lead firm that will have overall project accountability, as well as any specific past experiences with said firm(s) and the working relationship:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned acknowledges receipt of the following addenda, listed by number and date appearing on each:

Addendum No.	Date	Addendum No.	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FAILURE TO RETURN THIS PAGE AS PART OF BID DOCUMENT MAY RESULT IN REJECTION OF BID

**GWINNETT COUNTY, GEORGIA LIST OF SUBCONTRACTORS**

I do \_\_\_\_\_, do not \_\_\_\_\_, propose to subcontract some of the work on this project.  
I propose to Subcontract work to the following subcontractors:

NAME AND ADDRESS	TYPE OF WORK/TASK

Company Submitting bid \_\_\_\_\_

Gwinnett County, Georgia

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners  
(Name of Obligee)

75 Langley Drive, Lawrenceville, Georgia 30046  
(Address of Obligee)

Thereinafter referred to as Obligee: in the penal sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to Gwinnett County, Georgia, a proposal for furnishing materials, labor, and equipment for:\_\_\_\_\_

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the proposal be accepted, the Principal shall within ten days after receipt of notification of the acceptance, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth in the form and manner required by Gwinnett County, Georgia, and execute a sufficient and satisfactory Performance Bond and Payment Bond payable to Gwinnett County, Georgia, each in the amount of 100% of the total Contract Price, in form and with security satisfactory to said Gwinnett County, Georgia, and otherwise, to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to Gwinnett County, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

Gwinnett County, Georgia

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be constructed as a bond in compliance with the requirements thereof.

Signed, sealed and dated this \_\_\_\_\_ day of \_\_\_\_\_, A.D., 20\_\_\_\_\_.

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal Secretary)

By: \_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

ATTEST:

By: \_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
Resident or Nonresident Agent

\_\_\_\_\_  
(Address)

(SEAL)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals.



**Solicitation Name & No.** Sewer & Stormwater Assessment Program on an Annual Contract, BL098-20

**CONTRACTOR AFFIDAVIT AND AGREEMENT  
(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL)**

By executing this affidavit, the undersigned contractor verifies its compliance with The Illegal Immigration Reform Enhancements for 2013, stating affirmatively that the individual, firm, or corporation which is contracting with the Gwinnett County Board of Commissioners has registered with and is participating in a federal work authorization program\* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security] to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the Gwinnett County Board of Commissioners, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Gwinnett County Board of Commissioners at the time the subcontractor(s) is retained to perform such service.

\_\_\_\_\_  
E-Verify \* User Identification Number

\_\_\_\_\_  
Date Registered

\_\_\_\_\_  
Legal Company Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/State/Zip Code

BY: \_\_\_\_\_  
Authorized Officer or Agent  
(Contractor Signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title of Authorized Officer or Agent of Contractor

\_\_\_\_\_  
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE  
\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires:

**For Gwinnett County Use Only:**  
Document ID # \_\_\_\_\_  
Issue Date: \_\_\_\_\_  
Initials: \_\_\_\_\_

\* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).



Bid # & Description BL098-20, Sewer & Stormwater Assessment Program on an Annual Contract

**CODE OF ETHICS AFFIDAVIT**

***(THIS FORM SHOULD BE FULLY COMPLETED AND RETURNED WITH YOUR SUBMITTAL AND WILL BE REQUIRED PRIOR TO EVALUATION)***

In accordance with Section 54-33 of the Gwinnett County Code of Ordinances the undersigned bidder/proposer makes the following full and complete disclosure under oath, to the best of his/her knowledge, of the name(s) of all elected officials whom it employs or who have a direct or indirect pecuniary interest in or with the bidder/proposer, its affiliates or its subcontractors:

1. \_\_\_\_\_  
(Company Submitting Bid/Proposal)

2. (Please check  **one** box below)

No information to disclose *(complete only section 4 below)*

Disclosed information below *(complete section 3 & section 4 below)*

3. (if additional space is required, please attach list)

_____	_____
Gwinnett County Elected Official Name	Gwinnett County Elected Official Name
_____	_____
Gwinnett County Elected Official Name	Gwinnett County Elected Official Name

4. \_\_\_\_\_ Sworn to and subscribed before me this  
BY: \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
Authorized Officer or Agent Signature

\_\_\_\_\_ Notary Public  
Printed Name of Authorized Officer or Agent

\_\_\_\_\_ (seal)  
Title of Authorized Officer or Agent of Contractor

Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance will be available to view in its' entirety at [www.gwinnettcounty.com](http://www.gwinnettcounty.com)



## MAJOR CONSTRUCTION INSURANCE REQUIREMENTS

1. Statutory Workers' Compensation Insurance
  - (a) Employers Liability:
    - ✓ Bodily Injury by Accident - \$100,000 each accident
    - ✓ Bodily Injury by Disease - \$500,000 policy limit
    - ✓ Bodily Injury by Disease - \$100,000 each employee
  
2. Commercial General Liability Insurance
  - (a) \$1,000,000 limit of liability per occurrence for bodily injury and property damage
  - (b) Separate Owner's and Contractor's Protective policy with Gwinnett County Board of Commissioners **(and any applicable authority)** as **Named Insured**
  - (c) The following additional coverages must apply:
    - ✓ 1986 (or later) ISO Commercial General Liability Form
    - ✓ Dedicated Limits per Project Site or Location (CG 25 03 or CG 25 04)
    - ✓ Additional Insured Endorsement (Form B CG 20 10 with a modification for completed operations or a separate endorsement covering Completed Operations)
    - ✓ Blanket Contractual Liability
    - ✓ Broad Form Property Damage
    - ✓ Severability of Interest
    - ✓ Underground, explosion, and collapse coverage
    - ✓ Personal Injury (deleting both contractual and employee exclusions)
    - ✓ Incidental Medical Malpractice
    - ✓ Hostile Fire Pollution Wording
  
3. Auto Liability Insurance
  - (a) \$500,000 limit of liability per occurrence for bodily injury and property damage
  - (b) Comprehensive form covering all owned, non-owned, leased, hired, and borrowed vehicles
  - (c) Additional Insured Endorsement
  - (d) Contractual Liability
  
4. Umbrella Liability Insurance - Minimum \$1,000,000 limit of liability
  - (a) The following additional coverages must apply
    - ✓ Additional Insured Endorsement
    - ✓ Concurrency of Effective Dates with Primary
    - ✓ Blanket Contractual Liability
    - ✓ Drop Down Feature
    - ✓ Care, Custody, and Control - Follow Form Primary
    - ✓ Aggregates: Apply Where Applicable in Primary
    - ✓ Umbrella Policy must be as broad as the primary policy
  
5. Builder's Risk Insurance or Installation Floater Insurance required on all new structures, bridges, overpasses, culverts and railroad crossings - limit at least as broad as contract amount
  
6. Gwinnett County Board of Commissioners should be shown as an additional insured on General Liability, Auto Liability and Umbrella Liability policies.
  
7. The cancellation provision should provide 30 days notice of cancellation.
  
8. Certificate Holder should read:
  - Gwinnett County Board of Commissioners
  - 75 Langley Drive
  - Lawrenceville, GA 30046-6935
  
9. Insurance Company, except Worker' Compensation carrier, must have an A.M. Best Rating of A-6 or higher. Certain Workers' Comp funds may be acceptable by the approval of the Insurance Unit. European markets including those

based in London and domestic surplus lines markets that operate on a non-admitted basis are exempt from this requirement provided that the contractor's broker/agent can provide financial data to establish that a market is equal to or exceeds the financial strengths associated with the A.M. Best's rating of A-6 or better.

10. Insurance Company should be licensed to do business by the Georgia Department of Insurance.
11. Certificates of Insurance, and any subsequent renewals, must reference specific bid/contract by project name and project/bid number.
12. The Contractor shall agree to provide complete certified copies of current insurance policy (ies) or a certified letter from the insurance company (ies) if requested by the County to verify the compliance with these insurance requirements.
13. All insurance coverages required to be provided by the Contractor will be primary over any insurance program carried by the County.
14. Contractor shall incorporate a copy of the insurance requirements as herein provided in each and every subcontract with each and every Subcontractor in any tier, and shall require each and every Subcontractor of any tier to comply with all such requirements. Contractor agrees that if for any reason Subcontractor fails to procure and maintain insurance as required, all such required Insurance shall be procured and maintained by Contractor at Contractor's expense.
15. No Contractor or Subcontractor shall commence any work of any kind under this Contract until all insurance requirements contained in this Contract have been complied with and until evidence of such compliance satisfactory to Gwinnett County as to form and content has been filed with Gwinnett County. **The Acord Certificate of Insurance or a preapproved substitute is the required form in all cases where reference is made to a Certificate of Insurance or an approved substitute.**
16. The Contractor shall agree to waive all rights of subrogation against the County, the Board of Commissioners, its officers, officials, employees, and volunteers from losses arising from work performed by the contractor for the county.
17. Special Form Contractors' Equipment and Contents Insurance covering owned, used, and leased equipment, tools, supplies, and contents required to perform the services called for in the Contract. The coverage must be on a replacement cost basis. The County will be included as a Loss Payee in this coverage for County owned equipment, tools, supplies, and contents.
18. The Contractor shall make available to the County, through its records or records of their insurer, information regarding a specific claim related to any County project. Any loss run information available from the contractor or their insurer relating to a County project will be made available to the county upon their request.
19. Compliance by the Contractor and all subcontractors with the foregoing requirements as to carrying insurance shall not relieve the Contractor and all Subcontractors of their liability provisions of the Contract.
20. The Contractor and all Subcontractors are to comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, and any other laws that may apply to this Contract.
21. The Contractor shall at a minimum apply risk management practices accepted by the contractors' industry.

#### Surety Bonds (If Required)

All of the surety requirements will stay the same except the Surety Company must have the same rating as item 9 above.

BOND # \_\_\_\_\_

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners  
(Name of Oblige)

75 Langley Drive, Lawrenceville, Georgia 30046  
(Address of Oblige)

hereinafter called Oblige;

for the use and protection of all subcontractors and all persons supplying labor, services, skill, tools, machinery, materials and/or equipment in the prosecution of the work provided for in the contract hereinafter referred to in the full and just sum of

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) in lawful money of the United States, for the payment of which sum, will and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Oblige.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, and faithfully perform said Contract according to its terms, covenants, and conditions, and shall promptly pay all persons furnishing labor, materials services, skill, tools, machinery and/or equipment for use in the performance of said Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

ALL persons who have furnished labor, materials, services, skill, tools, machinery and/or equipment for use in the performance of said Contract shall have a direct right of action on this Bond, provided payment has not been made in full within ninety (90) days after the last day on which labor was performed, materials, services, skill, tools, machinery, and equipment furnished or the subcontract completed.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, HOWEVER, that no suit or action shall be commenced hereunder by any person furnishing labor, materials, services, skill, tools, machinery, and/or equipment having a direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal:

Unless such person shall have given notice to the Principal within ninety (90) days after such person did, or performed the last of the work or labor, or furnished the last of the materials, services, skill, tools, machinery and/or equipment for which claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials, services, skill, tools, machinery and/or equipment were furnished, or for whom the work or labor was done or performed. Such a notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Principal, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State in which the aforesaid project is located, save that such service need not be made by a public officer, and a copy of such notice shall be delivered to the Obligee, to the person and at the address provided for in the Contract, within five (5) days of the mailing of the notice to the Principal.

PROVIDED, FURTHER, that any suit under this bond must be instituted before the expiration of one (1) year after the acceptance of the public works covered by the Contract by the proper authorities.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

[Signatures Next Page]

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal Secretary)

(SEAL)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

ATTEST:

By: \_\_\_\_\_

\_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_  
Resident or Nonresident Agent

(SEAL)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

**BONDING AGENT CONTACT INFO**

Print Name \_\_\_\_\_

Company Name \_\_\_\_\_

E-Mail \_\_\_\_\_

Phone \_\_\_\_\_

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

**Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals.**

BOND # \_\_\_\_\_

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_  
(Corporation, Partnership or Individual)

hereinafter called Principal, and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

a Corporation of the State of \_\_\_\_\_, and a surety authorized by law to do business in the State of Georgia, hereinafter called Surety, are held and firmly bound unto

Gwinnett County Board of Commissioners  
(Name of Obligee)

75 Langley Drive, Lawrenceville, Georgia 30046  
(Address of Obligee)

hereinafter referred to as Obligee, are held and firmly bound unto said Obligee and all persons doing work or furnishing skill, tools, machinery, supplies, or material under or for the purpose of the Contract hereinafter referred to, in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such, as whereas the Principal entered into a certain contract, hereto attached, with the Obligee.

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well, truly, fully and faithfully perform said contract according to its terms, covenants, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreement of any and all duly authorized modifications of said contract that may hereafter be made, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that said Surety to this Bond, for value received, hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations, or additions to the terms of the Contract or to the work to be performed thereunder.

PROVIDED, FURTHER, that Principal and Surety agree and represent that this bond is executed pursuant to and in accordance with the applicable provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

(Signatures Next Page)

ATTEST:

\_\_\_\_\_  
(Principal Secretary)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
Resident or Nonresident Agent

(SEAL)

\_\_\_\_\_  
(Witness as to Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Principal)

By: \_\_\_\_\_

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Surety)

By: \_\_\_\_\_

(Attorney-in-Fact)

\_\_\_\_\_  
(Address)

**BONDING AGENT CONTACT INFO**

Print Name \_\_\_\_\_

Company Name \_\_\_\_\_

E-Mail \_\_\_\_\_

Phone \_\_\_\_\_

NOTE: If Contractor is Partnership, all partners should execute Bond. Surety Companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

**Principal Secretary, Principal and Witness as to Principal signature lines must be signed by three different individuals. Additionally, Resident or Nonresident Agent, Witness as to Surety, and Attorney-in-fact must be signed by three different individuals**

**\*\*\*ATTENTION\*\*\***

FAILURE TO RETURN THE FOLLOWING DOCUMENTS MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION:

1. FAILURE TO USE COUNTY BID SCHEDULE.
2. FAILURE TO RETURN APPLICABLE COMPLIANCE SHEETS/SPECIFICATION SHEETS.
3. FAILURE TO RETURN APPLICABLE ADDENDA.
4. FAILURE TO PROVIDE INFORMATION ON ALTERNATES OR EQUIVALENTS.
5. THE COUNTY SHALL BE THE SOLE DETERMINANT OF TECHNICALITY VS. NON-RESPONSIVE BID.
6. FAILURE TO PROVIDE BID BOND, WHEN REQUIRED, WILL RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. BID BONDS ARE NOT REQUIRED ON ALL BIDS. BOND REQUIREMENTS ARE CLEARLY STATED ON THE INVITATION TO BID. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE. **IF BONDS ARE REQUIRED, FORMS WILL BE PROVIDED IN THIS BID DOCUMENT.**
7. FAILURE TO PROVIDE CONTRACTOR AFFIDAVIT AND AGREEMENT, WHEN REQUIRED, MAY RESULT IN BID BEING DEEMED NON-RESPONSIVE AND AUTOMATIC REJECTION. CONTRACTOR AFFIDAVIT AND AGREEMENT IS NOT REQUIRED ON ALL BIDS. IF YOU NEED CLARIFICATION, CONTACT THE PURCHASING ASSOCIATE.



**GWINNETT COUNTY DEPARTMENT OF FINANCIAL SERVICES – PURCHASING DIVISION  
GENERAL INSTRUCTIONS FOR BIDDERS, TERMS AND CONDITIONS**

**I. PREPARATION OF BIDS**

- A. Each bidder shall examine the drawings, specifications, schedule and all instructions. Failure to do so will be at the bidder's risk, as the bidder will be held accountable for their bid response.
- B. Each bidder shall furnish all information required by the bid form or document. Each bidder shall sign the bid and print or type his or her name on the schedule. The person signing the bid must initial erasures or other changes. An authorized agent of the company must sign bids.
- C. With the exception of solicitations for the sale of real property, individuals, firms and businesses seeking an award of a Gwinnett County contract may not initiate or continue any verbal or written communications regarding a solicitation with any County officer, elected official, employee or other County representative other than the Purchasing Associate named in the solicitation between the date of the issuance of the solicitation and the date of the final contract award by the Board of Commissioners. The Purchasing Director will review violations. If determined that such communication has compromised the competitive process, the offer submitted by the individual, firm or business may be disqualified from consideration for award. Solicitations for the sale of real property may allow for verbal or written communications with the appropriate Gwinnett County representative.
- D. Sample contracts (if pertinent) are attached. These do NOT have to be filled out with the bid/proposal submittal, but are contained for informational purposes only. If awarded, the successful bidder(s) will be required to complete them prior to contract execution.
- E. Effective, July 1, 2013 and in accordance with the Georgia Illegal Immigration Reform Enhancements for 2013, an original signed, notarized and fully completed Contractor Affidavit and Agreement should be included with your bid/proposal submittal, if the solicitation is for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia). Failure to provide the Contractor Affidavit and Agreement with your bid/proposal submittal may result in bid/proposal being deemed non-responsive and automatic rejection.

**II. DELIVERY**

- A. Each bidder should state time of proposed delivery of goods or services.
- B. Words such as "immediate," "as soon as possible," etc. shall not be used. The known earliest date or the minimum number of calendar days required after receipt of order (delivery A.R.O.) shall be stated (if calendar days are used, include Saturday, Sunday and holidays in the number).

**III. EXPLANATION TO BIDDERS**

Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc. must be requested by the question cutoff deadline stated in the solicitation in order for a reply to reach all bidders before the close of bid. Any information given to a prospective bidder concerning an invitation for bid will be furnished to all prospective bidders as an addendum to the invitation if such information is necessary or if the lack of such information would be prejudicial to uninformed bidders. The written bid documents supersede any verbal or written communications between parties. Receipt of addendum should be acknowledged in the bid. **It is the bidder's responsibility to ensure that they have all applicable addenda prior to bid submittal.** This may be accomplished via contact with the assigned Procurement Agent prior to bid submittal.

**IV. SUBMISSION OF BIDS**

- A. Bids shall be enclosed in sealed envelopes, addressed to the Gwinnett County Purchasing Office with the name of the bidder, the date and hour of opening and the invitation to bid number on the face of the envelope. Telegraphic/faxed bids will not be considered. Any addenda should be enclosed in the sealed envelopes as well.
- B. ADD/DEDUCT: Add or deduct amounts indicated on the outside of the envelope are allowed and will be applied to the lump sum amount. Amount shall be clearly stated and should be initialed by an authorized company representative.
- C. Samples of items, when required, must be submitted within the time specified and, unless otherwise specified by the County, at no expense to the County. Unless otherwise specified, samples will be returned at the bidder's request and expense if items are not destroyed by testing.
- D. Items offered must meet required specifications and must be of a quality, which will adequately serve the use and purpose for which intended.
- E. Full identification of each item bid upon, including brand name, model, catalog number, etc. must be furnished to identify exactly what the bidder is offering. Manufacturer's literature may be furnished.
- F. The bidder must certify that items to be furnished are new and that the quality has not deteriorated so as to impair its usefulness.
- G. Unsigned bids will not be considered except in cases where bid is enclosed with other documents, which have been signed. The County will determine this.
- H. Gwinnett County is exempt from federal excise tax and Georgia sales tax with regard to goods and services purchased directly by Gwinnett County. Suppliers and contractors are responsible for federal excise tax and sales tax, including taxes for materials incorporated in county construction projects. Suppliers and contractors should contact the State of Georgia Sales Tax Division for additional information.
- I. Information submitted by a bidder in the bidding process shall be subject to disclosure after the public opening in accordance with the Georgia Open Records Act.

**V. WITHDRAWAL OF BID DUE TO ERRORS**

The bidder shall give notice in writing of his claim of right to withdraw his bid without penalty due to an error within two (2) business days after the conclusion of the bid opening procedure. Bids may be withdrawn from consideration if the price was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and material used in the preparation of the bid sought to be withdrawn. The bidder's original work papers shall be the sole acceptable evidence of error and mistake if he elects to withdraw his bid. If a bid is withdrawn under the authority of this provision, the lowest remaining responsive bid shall be deemed to be low bid.

No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted.

Supplier has up to forty-eight (48) hours to notify the Gwinnett County Purchasing Office of an obvious clerical error made in calculation of bid in order to withdraw a bid after bid opening. Withdrawal of bid for this reason must be done in writing within the forty-eight (48) hour period. Suppliers who fail to request withdrawal of bid by the required forty-eight (48) hours shall automatically forfeit bid bond. Bid

may not be withdrawn otherwise.

Bid withdrawal is not automatically granted and will be allowed solely at Gwinnett County's discretion.

#### VI. TESTING AND INSPECTION

Since tests may require several days for completion, the County reserves the right to use a portion of any supplies before the results of the tests are determined. Cost of inspections and tests of any item, which fails to meet the specifications, shall be borne by the bidder.

#### VII. F.O.B. POINT

Unless otherwise stated in the invitation to bid and any resulting contract, or unless qualified by the bidder, items shall be shipped F.O.B. Destination. The seller shall retain title for the risk of transportation, including the filing for loss or damages. The invoice covering the items is not payable until items are delivered and the contract of carriage has been completed. Unless the F.O.B. clause states otherwise, the seller assumes transportation and related charges either by payment or allowance.

#### VIII. PATENT INDEMNITY

The contractor guarantees to hold the County, its agents, officers or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the contractor is not the patentee, assignee or licensee.

#### IX. BID BONDS AND PAYMENT AND PERFORMANCE BONDS

##### (IF REQUIRED, FORMS WILL BE PROVIDED IN THIS DOCUMENT)

A five percent (5%) bid bond, a one hundred percent (100%) performance bond, and a one hundred percent (100%) payment bond must be furnished to Gwinnett County for any bid as required in bid package or document. **Failure to submit a bid bond with the proper rating will result in the bid being deemed non-responsive.** Bonding company must be authorized to do business in Georgia by the Georgia Insurance Commission, listed in the Department of the Treasury's publication of companies holding certificates of authority as acceptable surety on Federal bonds and as acceptable reinsuring companies, and have an A.M. Best rating as stated in the insurance requirement of the solicitation. **The bid bond, payment bond, and performance bond must have the proper an A.M. Best rating as stated in the bid when required in the bid package or document.**

#### X. DISCOUNTS

- A. Time payment discounts will be considered in arriving at net prices and in award of bids. Offers of discounts for payment within ten (10) days following the end of the month are preferred.
- B. In connection with any discount offered, time will be computed from the date of delivery and acceptance at destination, or from the date correct invoice or voucher is received, whichever is the later date. Payment is deemed to be made for the purpose of earning the discount, on the date of the County check.

#### XI. AWARD

- A. Award will be made to the lowest responsive and responsible bidder. The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements of the County, and the delivery terms will be taken into consideration in making the award. The County may make such investigations as it deems necessary to determine the ability of the bidder to perform, and the bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the County that such bidder is properly qualified to carry out the obligations of the contract.

- B. The County reserves the right to reject or accept any or all bids and to waive technicalities, informalities and minor irregularities in bids received.
- C. The County reserves the right to make an award as deemed in its best interest, which may include awarding a bid to a single bidder or multiple bidders; or to award the whole bid, only part of the bid, or none of the bid to single or multiple bidders, based on its sole discretion of its best interest.

## **XII. DELIVERY FAILURES**

Failure of a contractor to deliver within the time specified or within reasonable time as interpreted by the Purchasing Director, or failure to make replacement of rejected articles/services when so requested, immediately or as directed by the Purchasing Director, shall constitute authority for the Purchasing Director to purchase in the open market articles/services of comparable grade to replace the articles/services rejected or not delivered. On all such purchases, the contractor shall reimburse the County within a reasonable time specified by the Purchasing Director for any expense incurred in excess of contract prices, or the County shall have the right to deduct such amount from monies owed the defaulting contractor. Alternatively, the County may penalize the contractor one percent (1%) per day for a period of up to ten (10) days for each day that delivery or replacement is late. Should public necessity demand it, the County reserves the right to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

## **XIII. COUNTY FURNISHED PROPERTY**

No material, labor or facilities will be furnished by the County unless so provided in the invitation to bid.

## **XIV. REJECTION AND WITHDRAWAL OF BIDS**

Failure to observe any of the instructions or conditions in this invitation to bid may constitute grounds for rejection of bid.

## **XV. CONTRACT**

Each bid is received with the understanding that the acceptance in writing by the County of the offer to furnish any or all of the commodities or services described therein shall constitute a contract between the bidder and the County which shall bind the bidder on his part to furnish and deliver the articles quoted at the prices stated in accordance with the conditions of said accepted bid. The County, on its part, may order from such contractor, except for cause beyond reasonable control, and to pay for, at the agreed prices, all articles specified and delivered.

Upon receipt of a bid package containing a Gwinnett County "Sample Contract" as part of the requirements, it is understood that the bidder has reviewed the documents with the understanding that Gwinnett County requires that all agreements between the parties must be entered into via this document. If any exceptions are taken to any part, each must be stated in detail and submitted as part of the bid. If no exceptions are stated, it is assumed that the bidder fully agrees to the provisions contained in the "Sample Contract" in its entirety.

Any Consultant as defined in O.C.G.A. §36-80-28 that is engaged to develop or draft specifications/requirements or serve in a consultative role during the procurement process for any County procurement method, , by entering into such an arrangement or executing a contract that the consultant agrees to: (1) Avoid any appearance of impropriety and shall follow all policies and procedures of the County (2) disclose to the County, any material transaction or relationship pursuant to §36-80-28, considered a conflict of interest, any involvement in litigation or other dispute, relationship or financial interest not disclosed in the ethics affidavit, when ethics affidavit is required or such that may be discovered during the pending contract or arrangement; and (3) Acknowledge that any violation or threatened violation of the agreement may cause irreparable injury to the County,

entitling the County, to seek injunctive relief in addition to all other legal remedies. This requirement does not apply to confidential economic development activities pursuant to §50-18-72 or to any development authority for the purpose of promoting the development of trade, commerce, industry, and employment opportunities or for other purposes and, without limiting the generality of the foregoing, shall specifically include all authorities created pursuant to Title 36 Chapter 62; However, per provisions of subparagraph (e)(1)(B) of Code Section 36-62-5 reporting of potential conflicts of interest by development authority board members is required.

When the contractor has performed in accordance with the provisions of this agreement, Gwinnett County shall pay to the contractor, within thirty (30) days of receipt of any department approved payment request and based upon work completed or service provided pursuant to the contract, the sum so requested, less the retainage stated in this agreement, if any. In the event that Gwinnett County fails to pay the contractor within sixty (60) days of receipt of a pay requested based upon work completed or service provided pursuant to the contract, the County shall pay the contractor interest at the rate of ½% per month or pro rata fraction thereof, beginning the sixty-first (61<sup>st</sup>) day following receipt of pay requests. The contractor's acceptance of progress payments or final payment shall release all claims for interest on said payment.

#### **XVI. NON-COLLUSION**

Bidder declares that the bid is not made in connection with any other bidder submitting a bid for the same commodity or commodities, and that the bid is bona fide and is in all respects fair and without collusion or fraud. An affidavit of non-collusion shall be executed by each bidder. Collusion and fraud in bid preparation shall be reported to the State of Georgia Attorney General and the United States Justice Department.

#### **XVII. DEFAULT**

The contract may be canceled or annulled by the Purchasing Director in whole or in part by written notice of default to the contractor upon non-performance or violation of contract terms. An award may be made to the next low responsive and responsible bidder, or articles specified may be purchased on the open market similar to those so terminated. In either event, the defaulting contractor (or his surety) shall be liable to the County for costs to the County in excess of the defaulted contract prices; provided, however, that the contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause. Failure of the contractor to deliver materials or services within the time stipulated on his bid, unless extended in writing by the Purchasing Director, shall constitute contract default.

#### **XVIII. TERMINATION FOR CAUSE**

The County may terminate this agreement for cause upon ten days prior written notice to the contractor of the contractor's default in the performance of any term of this agreement. Such termination shall be without prejudice to any of the County's rights or remedies by law.

#### **XIX. TERMINATION FOR CONVENIENCE**

The County may terminate this agreement for its convenience at any time upon 30 days written notice to the contractor. In the event of the County's termination of this agreement for convenience, the contractor will be paid for those services actually performed. Partially completed performance of the agreement will be compensated based upon a signed statement of completion to be submitted by the contractor, which shall itemize each element of performance.

#### **XX. DISPUTES**

Except as otherwise provided in the contract documents, any dispute concerning a question of fact

arising under the contract which is not disposed of shall be decided after a hearing by the Purchasing Director, who shall reduce his/her decision to writing and mail or otherwise furnish a copy thereof to the contractor. The decision of the procurement agent shall be final and binding; however, the contractor shall have the right to appeal said decision to a court of competent jurisdiction.

#### **XXI. SUBSTITUTIONS**

Bidders offering and quoting on substitutions or who are deviating from the attached specifications shall list such deviations on a separate sheet to be submitted with their bid. The absence of such a substitution list shall indicate that the bidder has taken no exception to the specifications contained herein.

#### **XXII. INELIGIBLE BIDDERS**

The County may choose not to accept the bid of a bidder who is in default on the payment of taxes, licenses or other monies due to the County. Failure to respond to three (3) consecutive times for any given commodity/service may result in removal from the supplier list under that commodity/service.

#### **XXIII. OCCUPATION TAX CERTIFICATE**

Each successful bidder shall provide evidence of a valid Gwinnett County occupation tax certificate if the bidder maintains an office within the unincorporated area of Gwinnett County. Incorporated, out of County, and out of State bidders are required to provide evidence of a certificate to do business in any town, County or municipality in the State of Georgia, or as otherwise required by County ordinance or resolution.

#### **XXIV. PURCHASING POLICY AND REVIEW COMMITTEE**

The Purchasing Policy and Review Committee has been established to review purchasing procedures and make recommendations for changes; resolve problems regarding the purchasing process; make recommendations for standardization of commodities, schedule buying, qualified products list, annual contracts, supplier performance (Ineligible Source List), and other problems or requirements related to Purchasing. The Purchasing Policy & Review Committee has authority to place suppliers and contractors on the Ineligible Source List for reasons listed in Part 6, Section II of the Gwinnett County Purchasing Ordinance.

#### **XXV. AMERICANS WITH DISABILITIES ACT**

All contractors for Gwinnett County are required to comply with all applicable sections of the Americans with Disabilities Act (ADA) as an equal opportunity employer. In compliance with the Americans with Disabilities Act (ADA), Gwinnett County provides reasonable accommodations to permit a qualified applicant with a disability to enjoy the privileges of employment equal to those employees with disabilities. Disabled individuals must satisfy job requirements for education background, employment experience, and must be able to perform those tasks that are essential to the job with or without reasonable accommodations. Any requests for the reasonable accommodations required by individuals to fully participate in any open meeting, program or activity of Gwinnett County should be directed to Susan Canon, Human Relations Coordinator, 75 Langley Drive, Lawrenceville, Georgia 30046, 770-822-8165.

#### **XXVI. ALTERATIONS OF SOLICITATION AND ASSOCIATED DOCUMENTS**

Alterations of County documents are strictly prohibited and will result in automatic disqualification of the firm's solicitation response. If there are "exceptions" or comments to any of the solicitation requirements or other language, then the firm may make notes to those areas, but may not materially alter any document language.

**XXVII. TAX LIABILITY**

Local and state governmental entities must notify contractors of their use tax liability on public works projects. Under Georgia law, private contractors are responsible for paying a use tax equal to the sales tax rate on material and equipment purchased under a governmental exemption that is incorporated into a government construction project: excluding material and equipment provided for the installation, repair, or expansion of a public water, gas or sewer system when the property is installed for general distribution purposes. To the extent the tangible personal property maintains its character (for example the installation of a kitchen stove), it remains tax-exempt. However, if the installation incorporates the tangible personal property into realty, e.g., the installation of sheetrock, it becomes taxable to the private contractor. See O.C.G.A. 48-8-3(2) and O.C.G.A. 48-8-63

**XXVIII. STATE LAW REGARDING WORKER VERIFICATION**

Effective July 1, 2013 State Law requires that all who enter into a contract for the physical performance of services for all labor or service contract(s) that exceed \$2,499.99 (except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia) for the County, must satisfy the Illegal Immigration Reform Enhancements for 2013, in all manner, and such are conditions of the contract.

The Purchasing Division Director with the assistance of the Performance Analysis Division shall be authorized to conduct random audits of a contractor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The contractor and subcontractors shall retain all documents and records of its compliance for a period of five (5) years following completion of the contract. This requirement shall apply to all contracts for all labor or service contracts that exceed \$2,499.99 except for services performed by an individual who is licensed pursuant to Title 26, Title 43, or the State Bar of Georgia.

Whenever it appears that a contractor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employ of such contractor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security and may result in termination of the contract if it is determined at any time during the work that the contractor/or subcontractor is no longer in compliance with the Illegal Immigration Reform Enhancements for 2013.

State Law requires that all who enter into a contract for public works as defined by O.C.G.A. 36-91-2(10) for the County must satisfy the Illegal Immigration Reform Enhancements for 2013, in all manner, and such are conditions of the contract.

By submitting a bid to the County, contractor agrees that, in the event the contractor employs or contracts with any subcontractor(s) in connection with the covered contract, the contractor will secure from the subcontractor(s) such subcontractor(s) indication of the employee-number category applicable to the subcontractor, as well as attestation(s) from such subcontractor(s) that they are in compliance with the Illegal Immigration Reform Enhancements for 2013. Original signed, notarized Subcontractor Affidavits and Agreements must be submitted to the County.

The Purchasing Division Director with the assistance of the Performance Analysis Division shall be authorized to conduct random audits of a contractor's or subcontractors' compliance with the Illegal Immigration Reform Enhancements for 2013 and the rules and regulations of the Georgia Department of Labor. The contractor and subcontractors shall retain all documents and records of its compliance for a period of three (3) years following completion of the contract. This requirement shall apply to all contracts for the public works as defined by O.C.G.A. 36-91-2(10) where any persons are employed on the County contract.

Whenever it appears that a contractor's or subcontractor's records are not sufficient to verify the work eligibility of any individual in the employ of such contractor or subcontractor, the Purchasing Director shall report same to the Department of Homeland Security.

A contractor's failure to participate in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013 shall be sanctioned by termination of the contract. If it is determined that a subcontractor is not participating in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013, Gwinnett County may direct the contractor to terminate that subcontractor. A contractor's failure to follow Gwinnett County's instruction to terminate a subcontractor that is not participating in the federal work authorization program as defined by the Illegal Immigration Reform Enhancements for 2013 may be sanctioned by termination of the contract.

#### **XXIX. SOLID WASTE ORDINANCE**

No individual, partnership, corporation or other entity shall engage in solid waste handling except in such a manner as to conform to and comply with the current Gwinnett County Solid Waste Ordinance and all other applicable local, state and federal legislation, rules, regulation and orders.

#### **XXX. GENERAL CONTRACTORS LICENSE**

Effective July 1, 2008: All General Contractors must have a current valid license from the State Licensing Board for Residential and General Contractors, unless specifically exempted from holding such license pursuant to Georgia law (O.C.G.A. Section 43-41-17).

#### **XXIX. PRODUCTS MANUFACTURED IN GEORGIA**

Gwinnett County, when contracting for or purchasing supplies, materials, equipment, or agricultural products that exceeds \$100,000.00, excluding beverages for immediate consumption, shall give preference as far as may be reasonable and practicable to such supplies, materials, equipment, and agricultural products as may be manufactured or produced in this state. Such preference shall not sacrifice quality. Gwinnett County Board of Commissioners shall consider, among other factors, information submitted by the bidder which may include the bidder's estimate of the multiplier effect on gross state domestic product and the effect on public revenues of the state and the effect on public revenues of political subdivisions resulting from acceptance of a bid or offer to sell Georgia manufactured or produced goods as opposed to out-of-state manufactured or produced goods. Any such estimates shall be in writing. **(O.C.G.A. Section 36-84-1).**

#### **XXXI. INDEMNIFICATION**

To the fullest extent permitted by law, the Contractor shall, at his sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless the County, the engineer, and their agents and employees from and against all claims, damages, actions, judgments, costs, penalties, liabilities, losses and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, action, judgment, cost, penalty, liability, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by the negligent acts, errors by any act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless whether such claim is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or otherwise reduce any of the rights or obligations of indemnity which would otherwise exist as to any party or person described in this agreement. In any and all claims against the County, the engineer, or any of their agents or employees by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained



herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

#### **XXXII. CODE OF ETHICS:**

"Proposer/Bidder" shall disclose under oath the name of all elected officials whom it employs or who have a direct or indirect pecuniary interest in the business entity, its affiliates, or its subcontractors. The "Proposer/Bidder" shall execute a Code of Ethics affidavit. Failure to submit the affidavit during the bid or proposal process shall render the bid or proposal non-responsive.

The act of submitting false information or omitting material information shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution.

Any business entity holding a contract with Gwinnett County that subsequent to execution of the contract or issuance of the purchase order employs, subcontracts with, or transfers a direct or indirect pecuniary interest in the business entity to an elected official shall within five (5) days disclose such fact in writing under oath to the Clerk of the Board of Commissioners. Failure to comply shall be referred to the Purchasing Policy & Review Committee for action pursuant to the Purchasing Ordinance or to the District Attorney for possible criminal prosecution.

Note: See Gwinnett County Code of Ethics Ordinance E02011, Sec. 54-33. The ordinance will be available to view in its entirety at [www.gwinnettcounty.com](http://www.gwinnettcounty.com).

#### **XXXIII. PENDING LITIGATION:**

A bid submitted by an individual, firm or business who has litigation pending against the County, or anyone representing a firm or business in litigation against the County, not arising out of the procurement process, will be disqualified.

#### **XXXIV. ELECTRONIC PAYMENT**

Vendors accepting procurements should select one of Gwinnett County's electronic payment options.

- A. A vendor may select ePayables payment process which allows acceptance of Gwinnett County's virtual credit card as payment for outstanding invoices. The authorized vendor representative must send an email to: [vendorelectronicpayment@gwinnettcounty.com](mailto:vendorelectronicpayment@gwinnettcounty.com) and indicate the desire to enroll in Gwinnett County's virtual credit card payment process.
- B. A vendor may select Direct Deposit payment process and the payment will be deposited directly into an account at their designated financial institution. To securely enroll in Direct Deposit, either access your online [Vendor Login and Registration](#) on the County's web site and update the requested information on the Direct Deposit tab or mail a Direct Deposit Authorization Agreement form.

The County will send a Payment Advice notification via email for both payment types.

For more information about Electronic Payments, please go to the Treasury Division page on the County's Web Site or click here -> [Gwinnett County Electronic Payments](#).

#### **DIRECTIONS TO GJAC BUILDING FROM I-85**

Take I-85 to Georgia Highway 316 (Lawrenceville/Athens exit). Exit Highway 120 (Lawrenceville/Duluth exit) and turn right. At seventh traffic light, turn right onto Langley Drive. Cross Highway 29 through the traffic light and cross at the 4-way stop sign. The main public parking lot is on the left or behind the building, Click [Here](#), for additional information about parking. The Purchasing Division is located in the Administrative Wing.