



CITY OF COLUMBIA
AGENDA MEMORANDUM

MEETING DATE: May 17, 2016

DEPARTMENT: Utilities and Engineering

FROM: *Joey Jaco, Director of Utilities and Engineering*

SUBJECT: Smith Branch 03 SSES

PRESENTER: Joey D. Jaco

FINANCIAL IMPACT: Staff has negotiated a not to exceed fee for this Agreement of \$903,625.00 for the specified needs above with AECOM. The budget for this project is \$903,625.00. Funding for this Agreement will come from the Sanitary Sewer Capital Budget (5529999-SS7363-658650).

ORIGINAL BUDGET: \$800,000.00 (FY15-16)

BUSINESS PROGRAM: Mentor Protege Program

CLEAN WATER 2020?: Yes

FEMA DR-SC4241?: No

The above referenced Agreement is to compensate AECOM for providing services to assist the City of Columbia in repair of the aging gravity sewer system. The services performed as a part of this Scope of Service include gravity sewer inspection and data submittal and design plans and specifications for rehabilitation of sub basin. Smith Branch 03 sewer subbasin is situated adjacent to the following sewer subbasins: Crane Creek 21 to the North, Smith Branch 04 and 02 to the South, Smith Branch 01 to the East, and Smith Branch 04 to the West. Smith Branch 03 is intersected in the South to North direction by US Highway 21 (North Main St.). The southern portion of Smith Branch 03 is intersected by SC Highway 277, SC Highway 16, and SC Highway 555. On the western side of the subbasin, Colonial Dr. intersects in the South to North direction.

AECOM is a firm headquartered in Los Angeles and a local office in Columbia, SC. The following subconsultants will provide additional services: DESA, Inc (Protégé), a MBE/WBE/SBE firm with headquarters in Columbia, SC, will provide data collection and field work, public relations, construction administration and observation services. Hydrostructures a firm with headquarters in Cayce, SC, will provide CCTV and Dye Water Testing services. Services to be performed will impact City Council District 1.

Contract Amount: \$903,625.00

\$183,630.00 (20.32% of the contract amount) awarded to DESA, Inc., will provide data collection and field work, public relations, construction administration and observation services.

\$159,527.00 (17.65% of the contract amount) awarded to Hydrostructures will provide CCTV and Dye Water Testing services.

The Legal Department has reviewed the Agreement. The Director of Utilities and Engineering and the ACM for Operations recommend its approval.

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is made this ____ day of _____, 20__, by and between the City of Columbia, South Carolina (hereinafter referred to as the "City") and AECOM, (hereinafter referred to as the "Engineer"), for Engineer to render services to include gravity sewer inspection and data submittal and design plans and specifications for rehabilitation of sub basin.. Funding for this project has been identified as 5529999-SS7363-658650.

For and in consideration of the mutual covenants and promises contained herein, the parties agree as follows:

I. Scope of Services

Upon written notification by the City to proceed, the Engineer shall complete the scope of services more fully described in Exhibit A, attached hereto. The Engineer shall perform any and all incidental services not specifically set forth in Exhibit A, which are necessary to fully complete the scope of services described in Exhibit A.

II. Supplemental or Additional Services

Supplemental or Additional Services may be required of the Engineer by the City or recommended by the Engineer and approved by the City in writing.

The Engineer must obtain written approval from the City for any Supplemental or Additional Services prior to the work being performed. If the Engineer fails to obtain prior written approval to perform the work, the City is under no obligation to compensate the Engineer for services performed.

III. Term of Agreement

This Agreement shall expire, unless terminated earlier as provided for herein, on July 31, 2018, or at such time the total compensation provided for herein is reached, whichever is earlier.

IV. Schedule for Completion of Services

Time is of the essence. The Engineer shall complete any and all services performed under this Agreement within the timeframes as outlined in Exhibit C, attached hereto.

V. Compensation

A. The compensation to be paid by the City to the Engineer under this Agreement shown on Exhibit B attached hereto, for Task 1.0, Task 2.0, Task 3.0, Task 4.0, Task 5.0 and Task 6.0 shall be on a lump sum

basis totaling Eight Hundred Twenty-Five Thousand Seven Hundred Dollars Ninety-Seven and No/100 (\$825,797.00).

B The compensation to be paid by the City to the Engineer under this Agreement shown on Exhibit B attached hereto, for Task 7.0 shall be an hourly rate not to exceed fee of Eighty-Two Thousand Five Hundred Eighty Dollars and No/100 (\$82,580.00).

C. The total compensation to be paid by the City to the Engineer under this Agreement shown on Exhibit B attached hereto shall not exceed Nine Hundred Three Thousand Six Hundred Twenty-Five Dollars and No/100 (\$903,625.00). Use of contingency funds for additional services is dependent upon written authorization of the City.

D. The Engineer shall submit invoices no more frequently than monthly for services rendered during each phase of the Project. Each invoice submitted must describe the services for which payment is requested, show payment calculations and specify the person(s) rendering such service(s). **Each invoice must also clearly identify any portion of the fee invoiced for subcontracted services, including any such services that are specified in the Summary of Proposed Sub-consultants shown on Exhibit D hereto, and identify if the subcontractor is a Minority or Female Business Enterprise.** Each invoice shall bear the signature of the Engineer, which signature shall certify that the information contained in the invoice is true and accurate and that the invoice amount is currently due and owing. The City will not pay interest or penalty on any past due amount.

VI. Indemnification, Hold Harmless and Insurance

A. The Engineer shall provide to the City evidence of Professional Liability Insurance in an amount not less than One Million and no/100 (\$1,000,000.00) Dollars per occurrence and Two Million and no/100 (\$2,000,000.00) Dollars Aggregate and General Liability Insurance in accordance with the current Columbia Code of Ordinances, which can be located at www.columbiasc.net.

B. The Engineer shall furnish the City with a certificate showing satisfactory proof of carriage of the insurance required hereunder and such insurance shall be approved by the City prior to the Engineer and any subcontractor of the Engineer commencing any services under this Agreement. The City of Columbia shall be the Certificate Holder and shall be named as an Additional Insured.

C. The Engineer shall hold harmless, defend and indemnify the City from any and all claims, actions, suits, charges and judgments whatsoever that arise out of the Engineer's performance or nonperformance of the services or subject matter called for in this Agreement.

VII. Subcontracting Outreach Program (<http://www.columbiasc.net/business-outreach/>)

The attention of the Engineer is directed to the Subcontracting Outreach Program. The Engineer is required to comply with the terms and conditions of this policy which can be located at www.columbiasc.net/business-outreach/. The Engineer shall, in performance of the Agreement, only use those subcontractors and/or vendors upon which the Engineer's scope of services was based.

Subcontractor and/or vendor substitutions shall only be made upon the Owner's approval. The Engineer shall enter into contracts with those subcontractors and/or vendors, in the same dollar amount upon which the Engineers scope of services was based, prior to award of the Agreement. Such Agreements shall be contingent upon award of the Agreement by the Owner and the Owner's Notice to Proceed to the Engineer. Each invoice shall identify the dollar amount that will be paid to each subcontractor and/or vendor for services performed and/or materials/products furnished under the Agreement. The Engineer shall provide the name of each subcontractor and/or vendor and a description of the services performed and materials/products furnished by each subcontractor and/or vendor and the dollar amount to be paid to each subcontractor and/or vendor.

VIII. Mentor-Protégé Program (<http://www.columbiasc.net/business-outreach/>)

The City of Columbia shall encourage, where economically feasible, establishment of mentor-protégé relationships to ensure contracting opportunities for all businesses, including minority / women / small business enterprises. The Mentor-Protégé Program (MPP) helps develop private sector business relationships and enhances the contracting capabilities of minority-owned business enterprises (MBE), women-owned business enterprises (WBE), and small business enterprises (SBE). In order to provide opportunities for growth and to encourage hands-on business relationships, certain capital improvement projects may be designated by the City of Columbia as Mentor-Protégé Program projects. The City of Columbia has determined that participation in the City's Mentor-Protégé Program is required for this project under this Agreement shown on Exhibit F attached hereto. The Engineer must comply with Mentor-Protégé Program Guidelines. The Mentor Protégé Program Guidelines can be located at www.columbiasc.net/business-outreach/. The Engineer agrees that the Mentor Protégé Program does not create any contractual rights and/or duties between the City and the Protégé and that the City is not a party to the Implementation Plan. The Engineer agrees that it has or will enter into a separate contractual Agreement with the Protégé to which the City is not a party.

IX. Permits and Licenses

A. The Engineer shall be responsible for obtaining any approvals, permits and/or licenses as may be required of the Engineer in performing the services required under this Agreement. The Engineer shall be responsible for any costs relating to same.

B. The Engineer shall be responsible for identifying and providing any applications and supporting documentation to the City for any approvals and/or permits required of the City in order for the Engineer to perform the services required under this Agreement. Such approvals and/or permits may include, but not necessarily be limited to, SCDHEC Construction Permits, SCDHEC Stormwater Management for Construction Sites Permits, SCDHEC Water Resources Permits, Corps of Engineers Permits, City/County/SCDOT Encroachment Permits, and Encroachment Permits for other utility rights-of-way and Railroad Right-of-Way Encroachment Permits/Agreements. The City shall obtain the approvals and/or permits identified by the Engineer and pay any costs relating to same.

C. The Engineer shall answer questions and consult with the City and/or appropriate authorities as necessary to assist the City's efforts in obtaining required permits/approvals.

D. The Engineer shall procure a City of Columbia business license while performing services under this Agreement.

X. Duties upon Termination

At termination of this Agreement, the Engineer shall immediately provide the City with all records and data in any format the Engineer is capable of producing and at no cost to the City, which were generated, created or received by the Engineer in performance of the services required by this Agreement or as the City may deem necessary to perform the required services by the City or the Engineer's successor. All records shall be free from any proprietary claims or interest. The Engineer agrees to fully cooperate with the City and any successor to ensure an effective transition to continuously provide the required services.

XI. Termination of Agreement

The City may terminate this Agreement at any time upon any of the following grounds:

A. Failure by the City to appropriate funds for the performance of any of the services required in this Agreement in any annual budget;

B. The Engineer fails to perform any of the services required in this Agreement and does not correct such deficiency within fifteen (15) days having been notified by the City of such deficiency;

C. Force Majeure;

D. The City shall, at its sole option and discretion, have the right to terminate this contract for any reason whatsoever. A termination for default under this Agreement, if wrongfully made, shall be treated as a termination for convenience under this clause;

E. Upon expiration of the term of this Agreement; and

F. By mutual agreement.

Notice of termination shall be sent by registered mail, return receipt requested. In the event of termination, the Engineer shall only be entitled to the actual direct costs of all labor and material expended on the services required under this Agreement prior to the effective date of the termination or the Engineer shall be entitled to be paid a pro-rata percentage of the total Agreement price which is equal to its percent of completion, whichever of the two methods provides the lowest sum to be paid to the Engineer. In no event shall the Engineer be entitled to anticipatory profit or damages for any termination under this Agreement. In no event shall the Engineer be entitled to assert a claim in quantum meruit or any other measure of damages other than that stated herein.

XII. Ownership of Project Documents

All data, documents or other information of any description generated by or used by the Engineer

or any subcontractor retained by the Engineer and related to the services required by this Agreement shall be the property of the City and shall not be used by the Engineer for any purpose whatsoever except to perform the services required by this Agreement.

XIII. Notice

A. Written notice to the City shall be made by placing such notice in the United States Mail, postage prepaid and addressed to: Director of Utilities and Engineering, City of Columbia, Post Office Box 147, Columbia, South Carolina 29217.

B. Written notice to the Engineer shall be made by placing such notice in the United States Mail, postage prepaid and addressed to: AECOM, 101 Research Drive, Columbia, SC 29203.

XIV. Consent Decree

A. The services performed by the Engineer pursuant to this Agreement are required in whole or in part to satisfy the terms of the Consent Decree entered by the United States District Court for the District of South Carolina on May 21, 2014, in the case captioned *The United States of America and State of South Carolina by and through the Department of Health and Environmental Control v. City of Columbia*, Civil Action No. 3:13-2429-TLW (the "Consent Decree"), a copy of which has been provided to the Engineer by the City and is incorporated by reference herein. The Engineer shall perform the services pursuant to this Agreement in conformity with the terms of the Consent Decree as required by Paragraph 5 therein.

B. In addition to the requirements above, the Engineer shall comply with the document retention requirements of Paragraph 68 of the Consent Decree which includes, but is not limited to, the obligation to preserve all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in the Engineer's possession or control that relate in any manner to the Engineer's performance under this Agreement ("Preserved Documents"). Upon the Engineer's performance of all services required under this Agreement, the Engineer shall provide the City with all Preserved Documents. In addition to the requirements above, the Engineer shall provide the City with all Preserved Documents upon termination of this Agreement.

C. Upon the occurrence of a force majeure event as defined in Paragraph 55 of the Consent Decree, the Engineer shall provide notice to the City's Director of Utilities and Engineering in person, by phone, or by electronic mail within twenty-four (24) hours of when the Engineer first knew or should have known that the event might cause a delay. Within three (3) days thereafter, the Engineer shall provide written notice in accordance with Section XIII above to include the following information: an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken in an effort to prevent or minimize the delay; a schedule for implementation of any measures to be taken in an effort to prevent or mitigate the delay or the effect of the delay; and the Engineer's rationale for attributing such delay to a force majeure event. The Engineer shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure event.

D. The Engineer shall reimburse the City the amount of any stipulated penalties imposed on the City pursuant to Paragraph 47 of the Consent Decree if the Engineer neglects, fails, or refuses to meet the

deadlines set forth in Exhibit C attached hereto. The Engineer agrees that any failure to meet such deadlines will result in the City's failure to meet the deadlines set forth in the Consent Decree except in the event of force majeure notice by the Engineer which results in the extension of said deadline by the U.S. Environmental Protection Agency under the Consent Decree. The City reserves all other remedies available for the Engineer's failure to perform pursuant to the Agreement.

E. The Engineer shall perform the services pursuant to this Agreement using sound engineering practices as set forth in Paragraph 9 of the Consent Decree.

XV. Miscellaneous

A. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the City and the Engineer.

B. The Engineer shall be responsible for performance of all services required by this Agreement. The Engineer does not act as the City's agent or employee.

C. The Engineer will not assign or sublet its obligations to perform the services required by this Agreement without the written consent of the City.

D. In the event there are any disagreements between the City and the Engineer with regard to any of the requirements, specifications or interpretation of this Agreement, the Engineer agrees to defer to the reasonable interpretations of the City as, from time to time may be made by the City. Ambiguities in the terms of this Agreement, if any, shall not be construed against the City.

E. This Agreement shall be construed in accordance with the laws of the State of South Carolina. The Engineer agrees to subject itself to the jurisdiction and venue of the Circuit Courts of Richland County, State of South Carolina as to all matters and disputes arising or to arise under this Agreement and the performance thereof. The City may seek attorney's fees and the Engineer agrees to pay such fees as awarded by the Court or other body. No attorney's fees may be sought by, nor will be paid to, the Engineer.

F. This Agreement represents the entire agreement between the City and the Engineer and supersedes all prior communications, negotiations, representations or agreements, either written or oral. Only written Change Order signed by both the City and the Engineer may amend this Agreement.

G. The failure of either the Engineer or the City to insist upon the strict performance of any provision of this Agreement shall not be deemed to be a waiver of the right to insist upon strict performance of such provision or of any other provision of this Agreement at any time. Partial payment by the City shall not be construed as a waiver. Waiver of any breach of this Agreement shall not constitute waiver of a subsequent breach.

H. In the event any provision of this Agreement is determined to be void or unenforceable, all other provisions shall remain in full force and effect.

I. This Agreement is subject to City Council approval.

J. The Engineer is subject to the provisions of the 1991 Ethics Reform Act (8-13-100, et seq, South Carolina Code of Laws, 1976, as amended). Under this Act, City employees are prohibited from accepting anything of value from any person. "Anything of value" includes, but is not limited to, lodging, transportation, entertainment, food, meals, beverages, money, gifts, honorariums, discounts and interest-free loans.

Witness the parties' respective hands and seals on the date first written above.

CITY OF COLUMBIA, SOUTH CAROLINA

Witness

By: _____
Teresa Wilson, City Manager

AECOM,

Suzanne L. Watkins

Witness

By: *P. Thomas Anderson*

Title: *Vice President*

RECOMMENDED BY: _____
[Signature]
Joseph D. Jaco, P.E., Director of Utilities and Engineering

RECOMMENDED BY: _____
Melissa Gentry, P.E., Assistant City Manager for Operations

APPROVED AS TO FORM
Janne Lisowski

Legal Department City of Columbia, SC

**EXHIBIT A
SCOPE OF SERVICES**

**City of Columbia
CIP # SS7363
SB03**

Sewer System Evaluation Study and Sewer Rehabilitation Implementation

The services performed by AECOM(CONSULTANT) as a part of this project include providing technical engineering support to the City of Columbia (CITY) for a Sewer System Evaluation Study (SSES) of a portion of the CITY's sanitary sewer system to identify problems that may lead to sanitary sewer overflows (SSOs). The investigations are intended to identify structural, operations and maintenance, and infiltration and inflow (I/I) related problems. The intent of this project is to meet the requirements of the Continuing Sewer Assessment Program (CSAP) and the Infrastructure Rehabilitation Program (IRP) which are components of the Consent Decree under which the CITY is performing this work.

In this scope and all associated attachments, the CITY and OWNER are synonymous. The term CONSULTANT refers to the firm performing the field services (ENGINEER OR SUBCONSULTANT) during the study and design phase. Contractor refers to the construction contractor during the construction phase in this scope and Exhibit E.

The project area is identified in **Figure 1**. Pipes 15-inches in diameter and greater, and manholes connected to these pipes, will be assessed under a separate contract and are excluded from this Scope of Services. Pipes to be determined to be 15-inches in diameter and larger shall be field verified at the lowest downstream end, and verified by the CITY based on information currently available to avoid gaps in data. These pipes and associated manholes shall be added to the scope at the direction of the CITY if they have been determined to have not been previously inspected.

The purpose of this project is to collect data for a portion of the CITY's collection system infrastructure for use in determining rehabilitation and replacement needs. This Scope of Services specifically includes the following SSES tasks:

- Manhole Inspection and Survey
- Sanitary Sewer Closed Circuit Television (CCTV) Inspection
- Zoom Camera Television Pipe Inspection
- Gravity Sewer System Manhole Inspections
- Gravity Sewer System Smoke Testing
- Dye Testing

This project includes implementation of subsequent sewer system rehabilitation to address high priority problems that may lead to SSOs. This includes correcting structural and maintenance related defects and correcting sources of I/I. The rehabilitation implementation tasks include design of the high priority rehabilitation, bidding services, and general services support during construction of the sewer rehabilitation.

The specifications and all associated requirements in Exhibit E shall apply throughout this Scope of Services, even if not specifically referenced. CONSULTANT to determine with OWNER where specific tasks within the specifications fall into the overall Scope of Service if not clearly defined.

The asset naming conventions are currently being modified, and may vary slightly from what is presented currently in the Scope and attached specifications. Please coordinate with the CITY before beginning work to verify naming conventions to be used throughout the project.

Task 1.0 – Project Management and Administration during Assessment and Design

CONSULTANT will manage the efforts of its project team members and sub-consultants, assign manpower, delegate responsibilities, review work progress, monitor budget and schedule, and otherwise direct the progress of the work. As part of project administration, CONSULTANT will:

- Communicate with the CITY through a single point of contact, the CONSULTANT's Project Manager.
- Throughout the project, the CONSULTANT will maintain regular contact through the CITY's staff. This scope includes a kickoff meeting at the beginning of the project and 18 monthly progress meetings during the execution of Tasks 1, 2, 3, 4, and 5, and will include a 30 Percent Design Review Meeting. The CONSULTANT will issue meeting minutes for each meeting during the project. During Task 5, the CONSULTANT will hold a progress meeting at the 90 percent design completion milestone. At the project milestones (30 percent and 90 percent), the CONSULTANT will compile all comments received during the meetings and respond to one consolidated set of comments from the CITY utilizing the CITY's Standard Comment Form. Responses to the comments will be checked for acceptance by individual commenters before being accepted and closing out the individual comment. At the conclusion of final design, drawings and specifications will be submitted to the CITY for final review and approval. Revisions to the drawings will subsequently be made to incorporate the CITY's comments. This scope assumes four sets of design and construction documents will be delivered for each submittal (30 percent, 90 percent, draft final and final bid set). Electronic copies of the contract documents will also be delivered in PDF format. Milestone checklists will be utilized by the CITY's review team during the 30 and 90 percent design review meetings. A copy of these checklists will be provided by the CITY.
- Provide monthly schedule updates pertaining to CONSULTANT's portion of the work to the CITY. The schedule shall be included with an updated Monthly Progress Report to be submitted with a draft invoice to the CITY for review. A project schedule shall be created and updated not less than monthly in MS Project or Primavera P6. The initial detailed project schedule shall be reviewed by the CITY before proceeding with the Scope of Service. The schedule shall begin based on the date on the Notice to Proceed and shall use the calendar days as outlined in Exhibit C. All documents provided to the CITY for review and approval shall be provided in hardcopy and electronically in PDF format at a minimum.
- CONSULTANT shall submit a Work Summary spreadsheet that the CITY will utilize to report to Cityworks® on areas that have been inspected or rehabilitated along with each monthly invoice. A comprehensive list is to be provided with each invoice identifying each pipe and/or manhole or other asset, and what was done (cleaning, etc). A sample Work Summary template will be provided by the CITY for this spreadsheet.

- CONSULTANT will utilize SharePoint, a web based document storage, sharing, and controls website currently utilized by the CITY, to share and file documentation of project progress, data, decisions, deliverables, design and management of the project.
- Implement and adhere to internal quality control and quality assurance procedures and also ensure all work performed by subconsultants and subcontractors meets these quality control and quality assurance procedures prior to issuance of all deliverables.
- The CONSULTANT shall be responsible for the implementation of the CITY's Public Relations Plan and public notification as required in Exhibit E during the system evaluation and design phase of the project. CONSULTANT shall attend one public meeting that will occur at approximately the 90 percent design milestone. CONSULTANT shall prepare design technical documents and materials for the meeting, including draft design plans. CONSULTANT shall also have a computer with data accessible to show project area mapping, CCTV videos, zoom camera videos, photos, etc of the project area and will show the information upon request at the meeting.
- Invoicing for this Task will be finalized with the completion of Task 5.

Task 2.0 - Data Management

Data management is an imperative aspect to any successful SSES. A centralized project database will be created to organize and manage the collected information, and will be imported into the CITY's GIS system. The CITY will provide the database format required for project. The data management task will include the following activities:

1. **Review and Update Existing Asset Information (GIS Mapping and System Connectivity)**- CONSULTANT will request a copy of and update existing system information from the CITY's most recent wastewater utility network GIS dataset and will apply the current asset naming protocol to all features that are not currently using this nomenclature, while maintaining legacy naming protocols to allow the CITY to link old data to the new naming. CONSULTANT to request and use available Record Drawings provided by the CITY to supplement the GIS information available to identify existing manholes and pipes and their attributes in the project area. The asset naming protocol will be based on using a sub-basin ID and a unique identifier as specified in Exhibit E. As part of this process the CONSULTANT will identify and correct flow and connectivity issues within the dataset as well as any data gaps or missing/inconsistent data values. CONSULTANT will provide GIS data layers identifying the location of each issue and will provide an updated, complete GIS dataset to the CITY at the completion of field data collection activities.. Updated GIS datasets must meet the data development requirements as dictated by the CITY. The information updated in this section is for mapping and system connectivity and does not include inspection and condition assessment data. CONSULTANT to work with the CITY on integrating updated mapping into the CITY's existing GIS.
2. **Review of System Condition Information** - CONSULTANT will collect and review historical SSO information for the project area and will interview CITY operations staff for help in identifying problem areas. The CONSULTANT will conduct a field visit (windshield survey) of the project area to become more knowledgeable about the existing site conditions. Priority for the initial field visit shall be given to system components that include, at a minimum, pipes within close proximity to potentially inundated water bodies,

pipes within the floodplain, and critical areas such as major road crossings, aerial crossings, and railroad crossings.

3. **Data Quality Control Review** – CONSULTANT will utilize the CITY approved database software and management tools to perform quality control and review of all data collected during the project. Quality control and continuity checks will include but not be limited to the following:
 - a. Flow and connectivity checks to verify that the updated wastewater network data set (in GIS format) contains proper pipe flow directions and that all network features (manholes, pipes, etc.) are connected or coincident spatially in order to provide an accurate and connected electronic network representing the physical network installed.
 - b. All inspection records (manhole, CCTV, etc.) must link to the GIS features using the unique feature identifiers as specified in each of the detailed technical specifications documents for each type of work to be performed as part of the study (see Exhibit E).
 - c. Data collected during the field inspection work must be checked against standard engineering practices such that pipe and structure invert elevations do not result in adverse slopes or are in conflict (unless field confirmed). Pipe materials and diameters should be consistent throughout contract or linear areas and should increase in diameter towards downstream areas of the system, unless a pipe diameter change is confirmed in the field.
 - d. All database field values entered should be consistent and match valid codes provided by the CITY or as defined in Exhibit E.
 - e. Notations or free-form comments within the database should follow guidance provided in Exhibit E and be consistent such that the same comment should be used to reference similar notes or observations.
 - f. All Mapping, Inspection and Condition Assessment Data Submittals-CONSULTANT will review all submittals provided by SUBCONSULTANT and notify SUBCONSULTANT of any deficiencies found for correction and resubmittal. Once the submittal has been deemed final/approved, CONSULTANT shall submit this to the OWNER on a monthly basis at the monthly progress meeting unless another date is agreed upon, including any corrections that were made.

CONSULTANT to conduct a quality check on all submittals received following a Quality Control Plan submitted to and approved by the OWNER. CONTRACTOR to submit separate detailed Quality Control Plan to CONSULTANT and OWNER for approval for internal review before sending submittals to CONSULTANT for review. All subsequent submittals must be in compliance with this approved plan. Documentation of compliance with this plan is to be submitted with each milestone submittal (30 percent, 90 percent, Final).

CONSULTANT shall submit Smoke Testing, Dye Testing, CCTV and Manhole Inspection databases and associated data (including digital photographs, videos, and any other associated records) on a monthly basis to the OWNER after a full Quality Control review. See Exhibit E for additional information on these submittals. CONSULTANT may coordinate with the CONTRACTOR to consolidate submittals from other types of testing if same contractor is conducting the work.

OWNER to be provided with a Final External Hard Drive by the CONSULTANT with the first monthly submittal to allow for subsequent monthly data submittals to be loaded throughout the project. Final External Hard Drive refers to the master hard drive that will be large enough to store all of the data collected for the duration of the project, and will become property of the OWNER upon completion of the project. The CONSULTANT shall compile and submit to OWNER a sample complete database submittal and all associated data for detailed review before the first monthly data submittal. The sample set shall include 10-15 tests/inspections, and all associated data such as photos, videos, inspection forms, etc. that are required for each type of test/inspection. This sample set will be reviewed by the OWNER and any deficiencies will be noted to the CONSULTANT for correction and resubmittal. All photos/videos and associated data files should be loaded onto the hard drive in such a manner that they can easily be related to the databases. Folders should not be used unless required by the databases-files should have unique file names as specified in Exhibit E so they can be loaded into one directory without duplication of names.

CONSULTANT shall keep a digital log in either excel or database format tracking all submittals received by CONTRACTOR, and all submittals made to OWNER. This shall include at a minimum:

Date received from CONTRACTOR, date of submittal to OWNER, what is included in submittal (this must be clear so that at the end of the project when all of the submittal data is loaded onto one drive each submittal can be clearly identified based on this information- this should include the type of information (i.e. videos, photos, etc.), and the associated areas and assets being included as defined in each database)

Upon conclusion of each type of testing/inspection the CONSULTANT shall resubmit a full final database and all associated data and files to the CITY to ensure completeness and allow for review before deeming them FINAL.

Task 3.0 - Sewer Assessment

The sewer assessment to be conducted as a part of this project shall include manhole survey, manhole inspection, zoom camera inspection, smoke testing, CCTV, and dye testing of pipes within the project area less than 15-inches in diameter and all manholes associated with these pipes. The intent of this project is to perform survey and manhole inspections of all manholes in the project area. Zoom camera inspections will be conducted of all CITY-owned pipes connecting to these manholes. Smoke testing will be conducted for all pipes within the project area less than 15-inches in diameter, and the manholes connected to those pipes. It is estimated that the project area contains approximately 380 manholes associated with pipes less than 15-inches in diameter, and 90,017 linear feet of sewer main less than 15-inches in diameter.

Information from all field inspections will ultimately be stored in the CITY's existing data management system. To facilitate this, during the course of the project, the CONSULTANT shall store and manage the data in accordance with the specifications in **Exhibit E**. At the conclusion of the project, all data shall be submitted in a digital format following the requirements of the

specifications in Exhibit E and utilizing the electronic database formats given in the template files provided as part of various data collection specifications.

A brief summary of the technical requirements for the listed field inspection and testing work is provided below. Further information on each evaluation method is provided in Exhibit E. It should be noted that sewer flow control and sewer cleaning may also be required, for which detailed technical specifications are provided in Exhibit E.

1. **Gravity Sewer System Manhole Inspections** - Manhole inspections will be performed to verify the accuracy of the available mapping and to provide an opportunity for the mapping to be updated to reflect actual field conditions. This allows for field crews performing rehabilitation and/or replacement work to begin working more quickly and eliminate confusion regarding system connectivity, identification numbers, etc. Manhole inspections also evaluate the general condition of the system, identify specific defects or problems, and determine manhole rehabilitation recommendations.

Under this Scope of Services inspection crews will locate, open, and visually inspect approximately 380 manholes in the project area. This will be performed using zoom camera technology. The condition of the manholes will be assessed and an inspection report will be completed in accordance with the requirements set forth in Exhibit E.

Every reasonable effort shall be made to locate and inspect all manholes. Individual manholes that cannot be found within 15 minutes should be sent to the CITY for assistance in locating these manholes. A GIS map with an aerial of the manholes that could not be found should be provided to the CITY. Additional manholes found during inspections over the amount estimated in the scope will be paid for out of Client Controlled Contingencies. See Exhibit B.

Inspection crews will be expected to follow all reporting requirements and fill out all reporting forms listed in the NASSCO MACP handbook for Level 2 inspections.

In addition to the manhole inspections, preliminary inspections of the pipelines connected to the manholes will be performed using zoom camera technology. Field crews will conduct an initial screening of all adjacent pipes using a pole-mounted, stabilized zoom camera system. This will allow a quick inspection of the pipes to reveal defects, blockages, infiltration sources, etc. The inspector will "assess" each pipe utilizing the zoom feature to inspect the pipe interior. The digital imaging and storage unit included with the camera will be used to record the results of each pipe survey.

Using this preliminary pipe survey information, pipes will be prioritized using the NASSCO Pipeline Assessment and Certification Program (PACP) system in a separate PACP database for zoom inspections. Any PACP codes assigned using zoom camera results will be noted as such as detailed in Exhibit E as the NASSCO standards were developed for CCTV inspection work. Pipes will also be identified as either

- a. satisfactory
- b. needs cleaning/root treatment
- c. needs further inspection, or needs repair/rehabilitation

Pipes will be evaluated and a determination made whether manhole to manhole cleaning and internal television inspection is warranted. This will allow the CITY to maximize its available funds by focusing any necessary cleaning/internal pipe inspection services on the worst lines. CITY maintenance personnel will be notified of any defects needing immediate attention. Detailed technical requirements for the zoom camera inspections are included Exhibit E.

2. **Manhole Survey** – Survey will be performed on each manhole to obtain x,y coordinates, rim elevation, manhole invert elevation, and the invert elevation and size verification of all pipes entering and leaving the manhole. Requirements for manhole survey are provided in Exhibit E.

Upon the completion of manhole inspections and manhole surveys, a complete list of all manholes that were not found should be provided to the CITY, along with the reasoning. This list will support the removal of manholes in the GIS that were found to not exist, or to help direct the CCTV either during design or construction (depending on the criticality and other factors) in order to find manholes that could not be found for other reasons (such as deep burial) to make the mapping as complete and accurate as possible.

3. **Gravity Sewer System Smoke Testing** - Smoke testing enables field inspection staff to quickly identify and quantify sources of inflow and rain-induced infiltration entering the sewer collection system. This Scope of Service includes smoke testing of all sewers within the project area less than 15-inches in diameter. See Exhibit E for additional information, including testing procedures, data collection requirements, and database requirements for smoke testing.

All applicable information regarding the test will be collected and entered into a digital database format (see Exhibit E). All fields in the database shall be completed.

4. **Sanitary Sewer Television Inspection**- Pipes identified and prioritized as needing further inspection based on zoom camera (at a minimum level 4 and 5 defects, with consideration for the need to CCTV pipes rated less than this level located in between level 4 and 5 pipes) and smoke testing results, or determined to be critical (major roadway, water-body, railroad crossings, under buildings, downstream of SSO's, etc) will be inspected via CCTV. CCTV inspection shall consist of digital video recordings, digital photos and a NASSCO PACP database. Inspection logs shall also be provided. This scope assumes that 50 percent of the sewer lines (45,009 linear feet) will be CCTV inspected. All sewers shall be cleaned before performing CCTV. Detailed technical specifications for cleaning and CCTV inspections are provided in Exhibit E. Water for cleaning, dewatering, and disposal of debris shall be included in the cleaning and CCTV price. This scope assumes that 10 percent of the sewer lines (9,002 linear feet) will require heavy cleaning (as defined in Exhibit E) before performing CCTV.

Manholes that could not be located, lines that seem to dead end, or other miscellaneous questions should be CCTV'd when other field investigation options have been exhausted. This can either be done during the design or construction phase of the project, and should be done in order to provide the CITY with mapping as accurate as possible of the existing system. Any items found should be added to the mapping, and should be inspected and data provided as required for all other pipes and manholes within the system.

Dye Water Testing -Dye water testing can be used to assist in locating cross connections between storm water and sanitary sewer systems or to confirm connections from an identified smoke lead to the sanitary sewer where the connection is not known from the smoke test alone. Non-toxic dye will be used to investigate specific potential interconnections. Storm sewer cross-connections and area drains that are suspected of being connected to the sanitary sewer will be positively identified using the dye tracer procedure. Field documentation will be used to record findings. Internal pipeline inspection will determine the exact source of the suspected interconnection and establish the best abatement option. The findings and conclusions will be documented in a digital database of the inspection and will be delivered along with the digital photographs, and other associated data as further defined in Exhibit E. All fields in the database shall be completed. This scope assumes 25 dye tests will be required. See Exhibit E for additional information, including testing procedures, data collection requirements, and database requirements for dye testing.

Task 4.0 - Sewer Assessment Results and Preliminary Design Report

Task 4.1 - Sewer Assessment Results

This task includes review and analysis of the field data collected in previous tasks. As part of this task, defect tabulations will be performed on the manhole inspections, zoom camera, CCTV inspections, and smoke testing data. Defect tabulations shall include a quantification of structural defects and maintenance defects for manholes and pipes as well as classification of smoke testing points. This task shall include preparation of a summary of identified sources of I/I to the sewer system organized by sub basins, or portions of sub basins, that indicates the specific types of defects found and the quantity of each. Criteria for point repairs shall be developed jointly with the CITY and defects requiring point repairs shall be identified.

Each pipe shall be assigned an overall rating using the PACP quick score method and modified as directed by the CITY. Each manhole will be assigned an overall rating using a similar approach, as described in the scoring system to be provided by the CITY. The CONSULTANT will prioritize assets for rehabilitation based on criteria developed jointly with the CITY. Criteria will include the structural and maintenance levels and other criteria that may increase priority including but not limited to: input from operations and maintenance staff, proximity to creeks, 100 year floodplain, historical SSOs, critical crossings such as major roadway, aerial and above ground crossings, railroad crossings, high profile areas, areas where force mains enter the system, and lines under or near buildings.

Other criteria should also be evaluated and discussed with the City during this process such as the CITY's desire to rehabilitate all manholes where lines are being rehabilitated, the desire to have aerial/above ground crossings be encased and replaced with restrained joints, placing manholes on the end of lines where there are lampholes, cleanouts, or dead ends on lines that are not dedicated service lines or are lines owned by the CITY, as well as connecting gaps in areas where pipes are being rehabilitated to minimize breaks between longer runs or rehabilitation in an area.

The CITY would like for the CONSULTANT to make recommendations based on findings, but as a part of this scope to anticipate rehabilitating or replacing service laterals on all services on lines that are being rehabilitated. This includes the service up to the property line to the existing cleanout, or the placement of a new cleanout if one does not exist at that location. For areas where

sewer lines are not in public right-of-way, the cleanouts and services shall be replaced up to the edge of the prescriptive easement of 7.5 feet from the center of the sewer line (unless a different easement is known to exist).

A meeting will be held with the CONSULTANT and CITY to discuss the results of the structural and maintenance condition ranking and prioritization. The CONSULTANT will finalize the ranking and prioritization based on comments received during the meeting.

Task 4.2 - Develop Recommendations

The recommended rehabilitation approach will be determined based on the SSES information. The CONSULTANT is to evaluate multiple rehabilitation methods and make recommendations based on cost and other factors such as O&M, community impacts, CITY standards, etc. In addition to the rehabilitation recommendation, information required for rehabilitation design will be delivered including a list of sags observed, stationing of the required point repairs, station of the service laterals and clock position, manholes requiring lining, and other manhole rehabilitation work required.

Conceptual design level cost estimates for rehabilitation of the sewer and manholes will be prepared as well as a recommended rehabilitation implementation schedule. This task includes a meeting to review the recommended rehabilitation approach.

A schedule of quantities will be developed, which will include, but not be limited to the following types of sewer construction work as applicable:

- Cured-in-place structural pipe lining
- Pipe-bursting replacement
- Rehabilitation of manholes using cured-in-place liner, epoxy liner, and/or cementitious liners
- Replacement of manhole covers and/or frames
- Point repairs to replace sections of damaged or collapsed sewers
- Tree root removal and treatment
- Service lateral and clean-out replacement, addition, and repair (up to the property line)

This Scope of Services assumes open-cut replacement will be evaluated as an alternative for cost-comparison purposes when applicable. The CONSULTANT will work closely with the CITY to determine the available budget for sewer system rehabilitation.

A capacity analysis of the trunk sewer, evaluation of re-routing the sewer, evaluation of structural integrity of aerial crossings, and geotechnical services are not included in this Scope of Services, but may be added by amendment. However, the CONSULTANT shall notify the OWNER immediately of any findings in the field as described in EXHIBIT E. These notifications will help the CITY identify any areas that may have potential capacity related issues for further evaluation. Capacity analysis results performed by others, when available, will be incorporated into the rehabilitation decisions and/or priorities for rehabilitation under this Scope. A complete list of potential amendment items is provided in Attachment A to **Exhibit A**.

The CONSULTANT shall also be responsible for preparing and updating on a monthly basis an easement/property issue tracking spreadsheet defining those areas of concern for access, repair, and tree/fence/shed/other structure removal using a spreadsheet template provided by the CITY for the duration of the design.

Task 4.3 - Preliminary Design Report

The CONSULTANT will be responsible for developing a Preliminary Design Report (PDR) summarizing the SSES investigation, the prioritization of sewers for rehabilitation, and the preferred rehabilitation method(s). The PDR should also include a conceptual level cost estimate of the rehabilitation based on historical unit prices in the area. At a minimum, the PDR should consist of the following sections:

Section 1 -Background and Purpose

- Describes the study area, background, and project objectives
- Describes results of the windshield survey, historic SSOs, and interview with CITY staff

Section 2 -SSES Inspections

- Describes the SSES investigations
- Summarizes the changes made to the GIS based on the survey and SSES investigations
- Summarizes the defect tabulations for the manhole inspections, zoom camera investigation, smoke testing, CCTV, and dye testing
- Describes the methodology for assigning a structural and maintenance rating to each manhole and pipe
- Summarizes and maps the defect and structural rating for each pipe and manhole

Section 3 – Rehabilitation Recommendations

- Describes the rehabilitation recommendations and methodology used to determine the proposed rehabilitation method.
- Describes criteria for prioritization of the sewer pipe and manholes for rehabilitation.

Section 4 – Costs

- Contains the schedule of quantities and conceptual level cost estimates
- Describes assumptions used to develop the costs

Section 5 – Recommendations and Next Steps

- Summarizes the rehabilitation recommendations and provide a discussion of the next steps

Examples of the level of detail expected in submitted tables and figures are included in **Exhibit F**.

Note: the prioritization methodology presented in the example documents will not apply, the CONSULTANT is advised to follow a similar format.

The CONSULTANT will submit a draft PDR to the CITY and attend a meeting to discuss the CITY's comments. Following the meeting, the CONSULTANT shall incorporate the CITY's comments and finalize the report. This submittal is considered the 30 percent design review and this meeting is considered the 30 Percent Design Review Meeting.

CONSULTANT shall present the initial easement/property issue tracking spreadsheet to the CITY during this meeting, and provide updates monthly after this meeting. The CITY will provide copies of previous PDR's to the Consultant.

Task 5.0 - Rehabilitation Implementation

Upon completion of the inventory and condition assessment and the CITY's approval of the rehabilitation recommendations, the CONSULTANT will implement the repair and rehabilitation.

CONSULTANT will prepare contract documents for the CITY in order to invite bids for the construction of the sewer repairs and rehabilitation. This Scope of Services assumes that design drawings and specifications will be developed for 50 percent of the sewer in the project area (or approximately 45,009 feet). The design drawings will be submitted as GIS based drawings. An example drawing has been included in **Exhibit G**. CONSULTANT will provide permitting, bidding, and general construction services. It is assumed that work will be implemented under a single construction contract; if multiple construction contracts are required this agreement will be amended to authorize additional engineering services and fees. This agreement may be amended to include implementation of subsequent construction phases, if required.

Task 5.1 - Design Documents

CONSULTANT will be responsible for the submittal of 90 percent and Final Bid Set documents and meet the following requirements:

Design Drawings

1. Cover Sheet
2. General Notes and Legend
3. Sheet Index
4. Sewer Rehabilitation Sheets- The plan sheets (24-inch by 36-inch) will contain a plan view for sewer rehabilitation at a horizontal scale of one inch equals 100 feet with an aerial background and be detailed enough to be able to determine approximate field conditions for each repair. Houses and streets shall be labeled for better field identification. The sheets shall also contain tables of applicable information such as pipeline rehabilitation method, diameter, material, stationing of point repairs, stationing of laterals, and manhole rehabilitation method. This Scope of Service assumes that profile sheets will not be required. If profile sheets are determined to be required for a given location, the scope and budget will be amended to provide for these services. Sample drawings are included in Exhibit G for a 30 percent submittal, and are not all inclusive (they do not include house numbers, pipes to be CCTVd, manholes to be located/inspected, notes on pavement repair, etc) and are included to show overall look, general content and detail, and general preferred symbology for items shown on the drawings. The drawings shall be reproducible in black and white without the need for color to distinguish information shown on the drawings.
5. Sewer Installation Details

Specifications

Standard specifications and Contract Documents will be provided by the CITY. The CONSULTANT will be expected to provide:

1. Bid forms to be incorporated into the CITY's standard proposal section
2. Special Provisions Section (as applicable)
3. Contract Exhibits: Scope of Service, site drawings, reports and other background information
4. Technical Specifications shall include, but not be limited to (the CITY will provide some of these technical specifications to be used/modified as needed for the project):
 - Temporary erosion & sediment control
 - Preconditioning of sewers and manholes
 - Flow bypass and/or diversion pumping
 - Seals
 - Cured-in-place pipe lining of existing sewer mains
 - Point Repairs
 - Utility and private service line repairs
 - Manhole interior rehabilitation
 - New or replacement manhole construction
 - Pipe bursting

Technical Review

Ensuring a quality deliverable is the responsibility of the CONSULTANT. CONSULTANT shall have all progress drawings and specifications submitted to an internal technical review committee at the 90 percent completion milestone. The CONSULTANT's review committee shall consist of technical staff knowledgeable on the type of work designed and independent from the specific project. Following the technical reviews, design modifications shall be made by the CONSULTANT to finalize the construction documents.

Completion of Construction Documents

Presentation of the construction documents at the 90 percent completion will be made to the CITY following the CONSULTANT's internal technical review. Progress specifications shall be submitted to the CITY along with the drawings. Following the CITY's review, design modifications shall be made by the CONSULTANT and submitted to the CITY as Draft Final Documents (Draft 100 percent). Upon approval, these documents shall be finalized and will be considered Final Documents (Final 100 percent).

Prepare Final Cost Estimates

The CONSULTANT will prepare detailed cost estimates based on the construction documents and submit the cost estimates to the CITY at the 90 percent and final design milestones.

Task 5.2 – Permitting

This scope assumes that a South Carolina Department of Transportation (SCDOT) Encroachment Permit and City of Columbia Encroachment Permit will be required. It is assumed that standard traffic control details will be included in the design documents and that the Contractor will be developing detailed traffic control plans.

The CONSULTANT shall estimate the area of disturbance and must notify the CITY immediately if the area of disturbance is found to be over 1 acre. It is assumed that a storm water NPDES permit is required. Wetland delineation, wetland or stream mitigation work is also not included. This Scope of Services does not include railroad encroachment permits or permits/reporting required for SRF funding, but these can be added by amendment if required.

Task 5.3 – Project Bidding

The CONSULTANT shall provide services during the bidding phase to include leading a pre-bid conference, providing technical interpretation of the bid documents, preparing addenda, attending the bid opening, evaluating the bids and recommending award, and preparing Contract Documents for signature. Conformed documents will also be the responsibility of the CONSULTANT.

It is assumed that the duration of the Bid Period will be six weeks and that the CITY will be distributing the bid packages. An additional one month is assumed from selection of the Contractor to the issuance of the Notice to Proceed. While a formal prequalification process is not anticipated, the CONSULTANT will work with the CITY to include qualification requirements in the Specifications that will be submitted by the bidders with the bids.

Task 6.0 – General Services during Construction

This scope assumes that 50 percent of the sewer length within Basin SB03 will be rehabilitated during construction (or approximately 45,009 feet). After award of the contract, CONSULTANT will assist the CITY with contract administration and provide periodic observation of the construction work. It is anticipated that the construction period for the sewer rehabilitation project will be 12 months (365 days) for substantial completion and 30 days for final completion for a total construction duration of 395 days. An increase in the construction schedule may require an amendment to authorize additional construction services.

The CONSULTANT shall be responsible for enforcing the City's Public Relations Plan and public notification as required in the CITY's rehabilitation specifications.

The CONSULTANT will provide general services during construction as described herein. In the performance of its services during the Construction Phase, the CONSULTANT shall not supervise, direct or have control over Contractor's work nor shall the CONSULTANT have authority over or responsibility for the means, methods, techniques, sequences, procedures of construction or safety precautions and programs incidental to the work selected by the Contractor's, or for any failure of the Contractor's compliance with laws, rules, regulations, ordinances, codes or orders applicable to Contractor's.

Administration of Construction Contract

As part of general administration of the construction contract, the CONSULTANT will consult with and advise the CITY and act as its representative during the construction period. The CONSULTANT will provide contract administration and general services required for the Project, including:

- As CITY's representative for the duration of the construction contract, all communications to and from the contractor shall go through the CONSULTANT. On behalf of the CITY, the CONSULTANT shall administer the construction contract, respond to Contractor's correspondence, and issue instructions from the CITY;
- Maintain a complete document file for the project. Documents to be maintained include, but are not limited to: correspondence, quality control procedures, quality control testing; site inspection records, shop drawing schedule, change orders, scheduling, project meetings, cost and disbursement data, progress reports and all other documents pertaining to the construction contract;
- Hold a pre-construction meeting and monthly progress meetings that will address critical schedule requirements, payment procedures, emergency procedures, schedule updates, coordination issues, change orders, quality assurance testing approvals, and any other issues related to completion of the project. One pre-construction meeting and 11 monthly progress meetings should be budgeted.
- Document and store all project related files in SharePoint. This includes but is not limited to, logs, submittals, important emails, record drawings, etc. The CONSULTANT may place a portion of the burden on the CONTRACTOR through the construction documents, but the CONSULTANT is ultimately responsible in ensuring that all documents are loaded, and that they are loaded in a timely manner.
- CONSULTANT shall submit a Work Summary spreadsheet that the CITY will utilize to report to Cityworks® on areas that have been inspected or rehabilitated along with each monthly pay application by the CONTRACTOR. A comprehensive list is to be provided with each pay application identifying each pipe and/or manhole or other asset, and what was done (cleaning, lining, etc). A sample Work Summary template will be provided by the CITY for this spreadsheet.

Site Visits

The CONSULTANT will visit the site (excluding visits coinciding with monthly progress meetings) to observe the progress and quality of the executed work of the Contractor and to determine, in general, if such work is proceeding in accordance with the Contract Documents. During the CONSULTANT's visits, and on the basis of on-site observations, the CONSULTANT shall keep the CITY informed of the progress of the work, shall endeavor to guard the CITY against defects and deficiencies in such work, and may recommend to the CITY disapproval or rejection of work failing to conform to the Contract Documents. It is understood that the CITY does not desire to have the CONSULTANT provide full-time inspection services. This scope includes 8 hours a week of site visits for 48 weeks. If additional site visits are required, it is assumed that the CONSULTANT's contract will be amended to provide such additional services.

Shop Drawing Review

The CONSULTANT will review and approve (or take other appropriate action with respect to) Shop Drawings and samples, the results of tests and inspections, and other data that the Contractor is required to submit for conformance with the design concept of the Project and compliance with the information given in the Contract Documents; and receive and review (for general content as

required by the Specifications) maintenance and operating schedules and instructions, guarantees, bonds and certificates of inspection which are to be assembled by the Contractor in accordance with the Contract Documents, and transmit them to the CITY with written comments. This task includes review of the pre-construction video performed by the Contractor and advice to the CITY regarding Contractor's suggestions for additions or deletions of required point repairs and confirmation of the selected rehabilitation method throughout the life of the project. The CONSULTANT will review cured-in-place liner design calculations provided by the Contractor.

Preparation of Design Clarifications

The CONSULTANT will issue necessary interpretations and clarifications of the Contract Documents; have authority, as the CITY's representative, to require special inspection or testing of the work; act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work there under, and make decisions on all claims of the CITY and Contractor relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work.

Work Change Directives will be issued to document required point repairs not contained in the contract documents. This scope does not include reissuing the drawings or design of open-cut replacement.

Quality Assurance Testing

The CONSULTANT will specify the quality assurance testing that is necessary for the project in the construction specifications relative to its designs. Coupon testing required for the CIPP lining contractor will be performed by Contractor at an independent testing laboratory.

Review of Applications for Payment

Based on on-site observations and review of the applications for payment with the accompanying data and schedules, the CONSULTANT will determine the amounts payable to Contractor on a monthly basis. The CONSULTANT will then recommend by email to the CITY, payments reasonably due to Contractor.

Change Orders and Time Extensions

The CONSULTANT will provide services in connection with change orders to the Construction Contract to reflect minor changes or deletions requested by the CITY/CONSULTANT or the Contractor and make revisions to Drawings and Specifications occasioned thereby. An accurate listing of additional costs and credits as a result of change orders will be maintained by the CONSULTANT. Upon receipt of a requested change order, the CONSULTANT will review it in detail and then discuss it with the CITY, and, together, will determine the manner in which to proceed. Larger changes or claims asserted by Contractor and major redesigns requested by the CITY or Contractor may require additional analyses or evaluation beyond the scope of this Contract.

Final Inspections

The CONSULTANT will conduct a walk-through inspection with the Contractor and the CITY to determine if the Project has reached substantial and/or final completion and prepare a punch list of work items remaining. The CONSULTANT will conduct one final inspection to determine if the work is acceptable, so that the CONSULTANT may recommend, in writing, final payment to the Contractor and may give written notice to the CITY and the Contractor that the work is acceptable.

The CONSULTANT will observe the work of the Contractor to see that it has been completed in substantial accordance with respect to the Drawings and Specifications prepared by the CONSULTANT. It is assumed that the CONSULTANT will review 100 percent of the post rehabilitation inspection videos provided by the Contractor. Comments from review of post-rehabilitation inspection tapes and the final inspection visit will be incorporated into the final punch list and forwarded to the Contractor.

Final Completion

At the conclusion of the project, the CONSULTANT will receive, review and transmit to the CITY with written comments guarantees, bonds, and certificates that are required by the Contract Documents and provided by the Contractor. Record drawings are the responsibility of the CONSULTANT and must be submitted in PDF format and with all finalized data entered into the GIS database and submitted to the CITY for review and approval. ALL database submittals shall meet the CITY's formatting and naming requirements and include all fields defined by the CITY.

Task 7.0 – Additional Services

Task 7.1 – General Tasks

The CITY reserves the right to amend this Agreement so that Consultant may furnish additional services such as those listed below:

- Additional Surveying outside original scope or for Record Drawings.
- Additional Construction Services beyond the hours and time allotted under Task 6.0 in this agreement
- Inspections in excess of the specific numbers listed in Task 3.0 in this agreement
- Flood Study or Flood Impact Analysis
- Professional engineering services related to additional or extended design, bidding, and construction services. Bidding services are based on a forty-five (45) day advertisement period.
- Additional meetings with the CITY and agencies beyond those scheduled in the agreement

For services rendered under Task 7.0 - Additional Services, compensation to the Consultant shall be negotiated with the CITY. A client controlled contingency is provided in this proposal to cover additional services. No additional services will be performed without written approval from the CITY.

Attachment A to Exhibit A
ADDITIONAL SERVICES
City of Columbia, SC
CIP # SS7363

The CITY reserves the right to amend this Agreement so that the CONSULTANT may furnish additional services such as those listed below. Additional compensation for additional services rendered will be provided by the CITY.

- Additional SSES data collection including CCTV inspection
- Pre- and/or post-rehabilitation flow monitoring
- Evaluation of aerial stream crossings
- Geotechnical services
- Preparation of easement plats
- Hydraulic capacity evaluations
- Open-cut design
- Professional Engineering services related to additional or extended design, bidding, and construction services.
- Additional Permitting (Railroad, Wetlands, etc.)

EXHIBIT B

COMPENSATION

City of Columbia

CIP # SS7363

SB03

Sewer System Evaluation Study and Sewer Rehabilitation Implementation

Compensation for services provided under Tasks 1 through 7 as outlined in Exhibit A, Scope of Services, is estimated to be a total of \$908,377.00. This includes \$825,797.00 of lump sum tasks, as well as \$82,580.00 of hourly tasks. Lump Sum and Hourly tasks are clearly labeled in the chart below.

An estimated breakdown of the fee is shown in the following table:

Task	Description	Fee Type	Hours	Subconsultants	Total
1.0	Project Management & Administration	Lump Sum	442	\$16,500.00	\$81,530.00
2.0	Data Management	Lump Sum	430	\$0.00	\$47,100
3.0	Sewer Assessment	Lump Sum	1580	\$253,257.00	\$439,517.00
4.0	Sewer Assessment Results and Preliminary Design Report	Lump Sum	432	\$0.00	\$46,500.00
5.0	Rehabilitaiton Implementation	Lump Sum	386	\$0.00	\$44,610.00
6.0	General Services During Construction	Lump Sum	706	\$73,400	\$162,220
Project Sub Totals			3976	\$343,157.00	\$821,477.00
7.0	Additional Services	Hourly	TBD	\$0.00	\$82,148.00
Total of Contract			3976	\$343,157.00	\$903,625.00
% of Contract to Subconsultants				17.7%	
% of Contract to Protégé				20.3%	

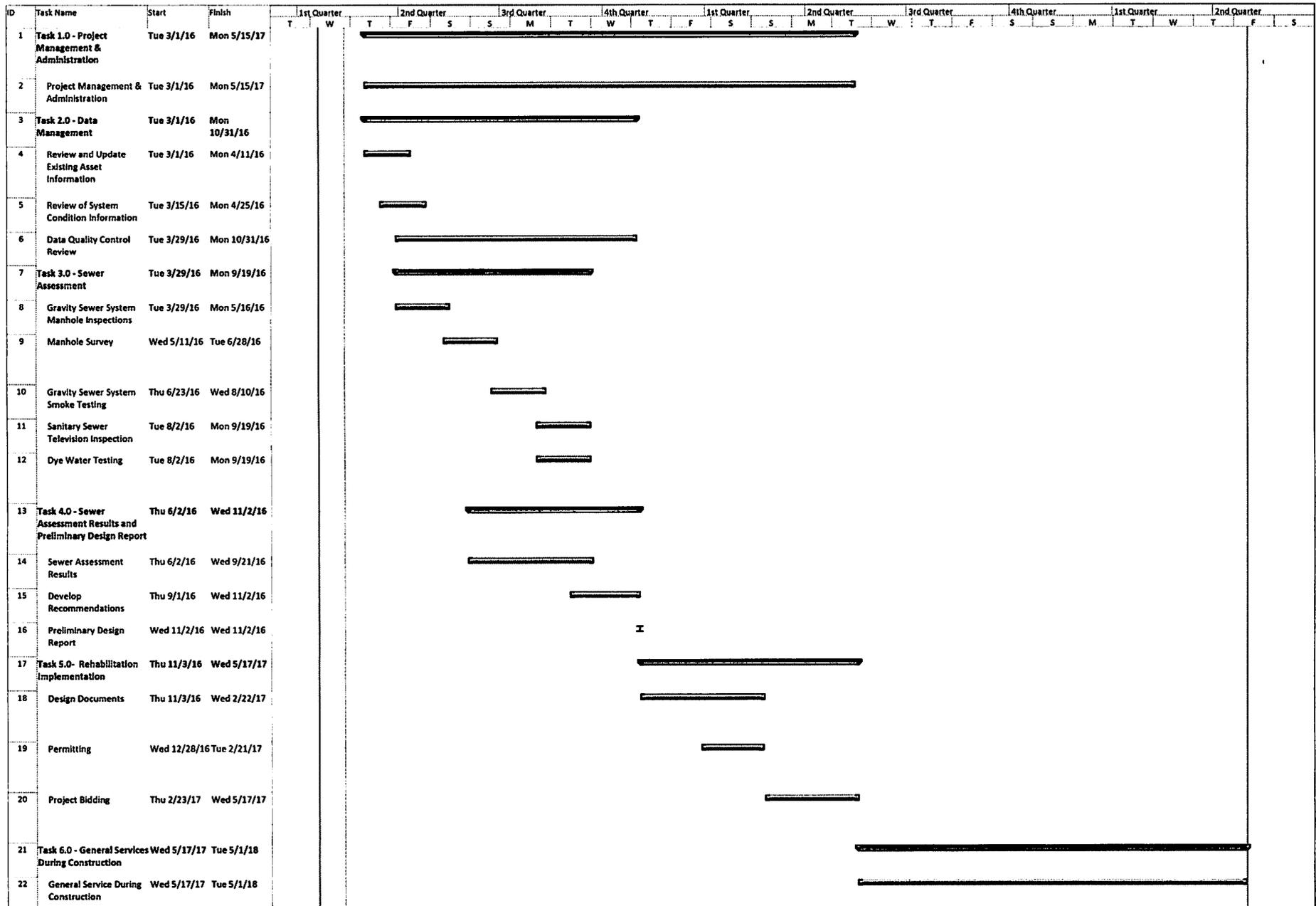
The Engineer's requirement for Subconsultant and/or Protégé Participation is 20%.

EXHIBIT C

City of Columbia

CIP # SS7363

**SB03 Sewer System Evaluation Study and Sewer Rehabilitation Implementation
Schedule – Gantt Chart**



Project: Project Schedule 2016.02
Date: Fri 2/12/16

Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Deadline	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Progress	

Page 1

Exhibit D

**City of Columbia
CIP # SS7363**

SB03 Sewer System Evaluation Study and Sewer Rehabilitation Implementation

SUBCONSULTANT FIRM INFORMATION RECORDS

The Engineer shall list all firms, including minority and female owned firms, providing subconsulting services under this Agreement. The list shall be submitted in the format provided below. Any proposed changes must be submitted in writing to the City, including the reason(s) for the proposed changes, prior to initiation of any action by the Engineer. Any invoices submitted for payment under this Agreement must include the dollar amount to be paid to each firm listed below for the invoice period.

Firm Name and Address	Contact Name and Telephone #	Group/Classification (MBE, WBE, SBE, Non MBE/WBE/SBE) Select ONE	Services to be Provided	Dollar Value of Services*
DESA, Inc. 400 Percival Road PO Box 6805 Columbia, SC 29260	Diane Sumpter 803.730.6466	M/F/SBE – Protégé	Protégé – Data Collection and Field Work, Public Relations, Construction Administration and Observation	\$183,630.00
Hydrostructures, P.A. 1725 12 th Street Cayce, SC 29033	Jeff Westbrook 803.563.5237	NON-MBE/WBE/SBE	CCTV and Dye Water Testing	\$159,527.00
		36T		

*Estimated fee; fee may vary based on actual services provided.
Please clearly note the Protégé Firm in the “Group” Column.
Add additional rows as needed.

EXHIBIT E

City of Columbia

CIP # SS7363

SB03 Sewer System Evaluation Study and Sewer Rehabilitation Implementation

The following specifications (as dated at the time of the contract signing) are applicable to this project:

Section 02650	Sewer Cleaning
Section 02731	Sewer Inspection CCTV
Section 02732	PACP Database Template
Section 02761	Dye Testing
Section 02762	Dye Testing Database Template
Section 02767	Gravity Sewer System Smoke Testing
Section 02768	Gravity Sewer System Smoke Testing Template
Section 02777	Manhole Inspection
Section 02778	MACP Database Template
Section 02965	Sewer Flow Control



CITY OF COLUMBIA

Department of Utilities and Engineering
Compliance Division
P.O. Box 147 | Columbia, South Carolina 29217
Phone: 803-545-3049 Fax: 803-545-4130

MENTOR PROTÉGÉ PROGRAM Implementation Plan

Date: <u>2/3/16</u>	Project Number: <u>CIP 7363</u>
Mentor: <u>AECOM (URS)</u>	Project Name: <u>SB03 Sewer System Evaluation Study and Sewer Rehabilitation Implementation</u>
Protégé: <u>DESA, Inc.</u>	Duration of the Project: <u>27 Months</u>
Project Contract Amount: <u>\$903,625.00</u>	Protégé Amount: <u>\$183,630.00</u>

Statement of Commitment: Both Mentor and Protégé are committed to providing an adequate amount of resources and effort to execute the plan below. Mentor and Protégé acknowledge the Implementation Plan is a joint plan and agree to meet at least quarterly to verify compliance with this Plan.

1. How do the Mentor and Protégé intend to work together on the designated project? Address contractual relationship, general roles and informal teaming arrangements.

DESA serves as a subcontractor on the above referenced 27-month project, providing Project Management Assistance, Field Inspections (including manhole inspections, preliminary zoom camera inspections, and smoke testing), and Contract Administration Services (i.e. – scheduling and conducting pre-bid meeting, attending monthly construction progress meetings, scheduling and conducting pre-construction meeting, assisting with preparation and processing change orders, and witnessing critical construction steps, testing as required by contract documents).

2. How will the specific, quantitative goals in the Annual Business Plan and MPP Agreement be implemented via the work on the project? Address general goals here and specific goals in question 9.

DESA intends to continue growing and improving their skillset by increasing their plan reviews and progress updates with AECOM (URS) throughout the project to ensure adequate knowledge of the plans, specifications, and schedule.



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Department of Utilities and Engineering
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P.O. Box 147 | Columbia, South Carolina 29217
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3. How will the team focus on developing protégé's business and implementing the actions necessary to obtain results reflected in the Mentor-Protégé Agreement? Identify milestones, thresholds, or other indicators team that would indicate success is being achieved.

Continued work with the City will improve the protégé's business by helping them maintain qualified staff.

4. Proposed manpower and resources from both the Mentor and the Protégé is required for the project. Address key personnel, equipment/materials, and insurance/bonding. Address special arrangements where applicable.

Mentor: Phillip Dieckmann, PE
Ed Hart, PE
Tom Haselden, PE
Additional URS staff as required
Insurance provided as required by the City of Columbia

Protégé: Dan Lavender, PE
AutoCAD Civil3D 2014
DESA provides insurance certificate naming mentor as insured to include: (1) \$1,000,000 General Liability – Single Occurrence and \$2,000,000 Aggregate, (2) \$1,000,000 Auto Liability, (3) \$1,000,000 Umbrella Liability, (4) \$1,000,000 Worker's Compensation, and (5) \$1,000,000 Professional Liability.

Subcontractors:

N/A

Special Arrangements:

N/A

5. What scope of work to be performed by each participant of the MPP team?

a. Description of Mentor's responsibilities: Responsible for overall design and coordination of the entire project, including producing construction plans and specifications, coordinating with all subcontractors, bid administration, and construction administration.



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b. Description of Protégé's responsibilities on project: DESA will support public relations during the project, perform field inspections such as manhole inspections, preliminary zoom camera inspections, and smoke testing, schedule and conduct pre-bid meeting, perform construction observation, schedule and conduct pre-construction meetings, witness critical construction activities and testing, provides reports and photographs of construction activities.

c. Description of responsibilities that will be completed as a team:
The team will conduct monthly progress meetings, prepare and process change orders and MPP reports.

6. What is the anticipated duration (in months) of each major phase of the project? During which phases will the Protégé be utilized?

The project is estimated at 27 months. The Protégé will be utilized in four (4) areas:

- 1) Public Relations
- 2) Field Inspections - manhole, preliminary zoom camera inspections, and smoke testing
- 3) Construction Administration
- 4) Construction Observation

7. How will the team comply with and maintain the focus on the requirements of the program for the duration of the project?

Our team holds quarterly progress meetings, in addition to the regular weekly communications to ensure all aspects of our business plan are constantly being checked for compliance.

8. What are the team's specific, quantitative goals and milestones for the current project?

The team's goal for the current project is identical to previous projects. Our goal is to always provide superior services on this and every City of Columbia project. A new goal for this project is to conduct Mentor/Protégé plan review meetings to discuss specifics about upcoming



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construction activities a week in advance.

9. Outline of Regularly Scheduled meeting between Mentor and Protégé (Progress reporting).

Generally, we try to meet one week prior to each MPP quarterly reporting deadline, at a minimum. During projects, we have monthly scheduled meetings and usually speak on a daily basis.

10. Define payment schedule and financial terms identifying milestones for initial, progress and final payments.

DESA prepares and submit invoices monthly. For lump sum, fixed priced contracts, DESA invoices in equal monthly payments over the contract performance period. For time and material contracts, DESA invoices based on actual work performed during the month.

11. List the Subcontractors that will be used on this project, as well as the information requested below: (The Subcontractor(s) listed below will NOT consist of your Protégé.)

Subcontractor's Name	Telephone	Address	Who will they report to?	Contract Amount	MPP MBE, WBE, SBE
Hydrostructures	803-563-5237	1725 12 th Street Cayce, SC 29033	AECOM (URS)	\$159,527.00 (17.7%)	N/A



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12. What percentage of the project is being implemented by the Protégé? Must equate to a minimum of 20% of total contract amount.

Protégé Contract Value: \$183,630.00

Percentage of Contract: 20.3% (Minimum of 20% of total contract amount is required)



CITY OF COLUMBIA

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MENTOR-PROTEGE IMPLEMENTATION PLAN SIGNATURE SHEET

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their proper officials thereunto duly authorized as of the dates below indicated:

EXECUTED by [Signature] (Mentor Firm) this 22 day of March 2016
Corporate SEAL

By: [Signature]
Title: Vice President

ATTEST: [Signature]
By: Carol F. Brandenburg-Smith
Title: Associate Vice President & Corporate Secretary for URS Corporation

EXECUTED by DESA, INC. (Protégé Firm) this 10th day of March 2016.
Corporate SEAL

By: [Signature]
Title: President

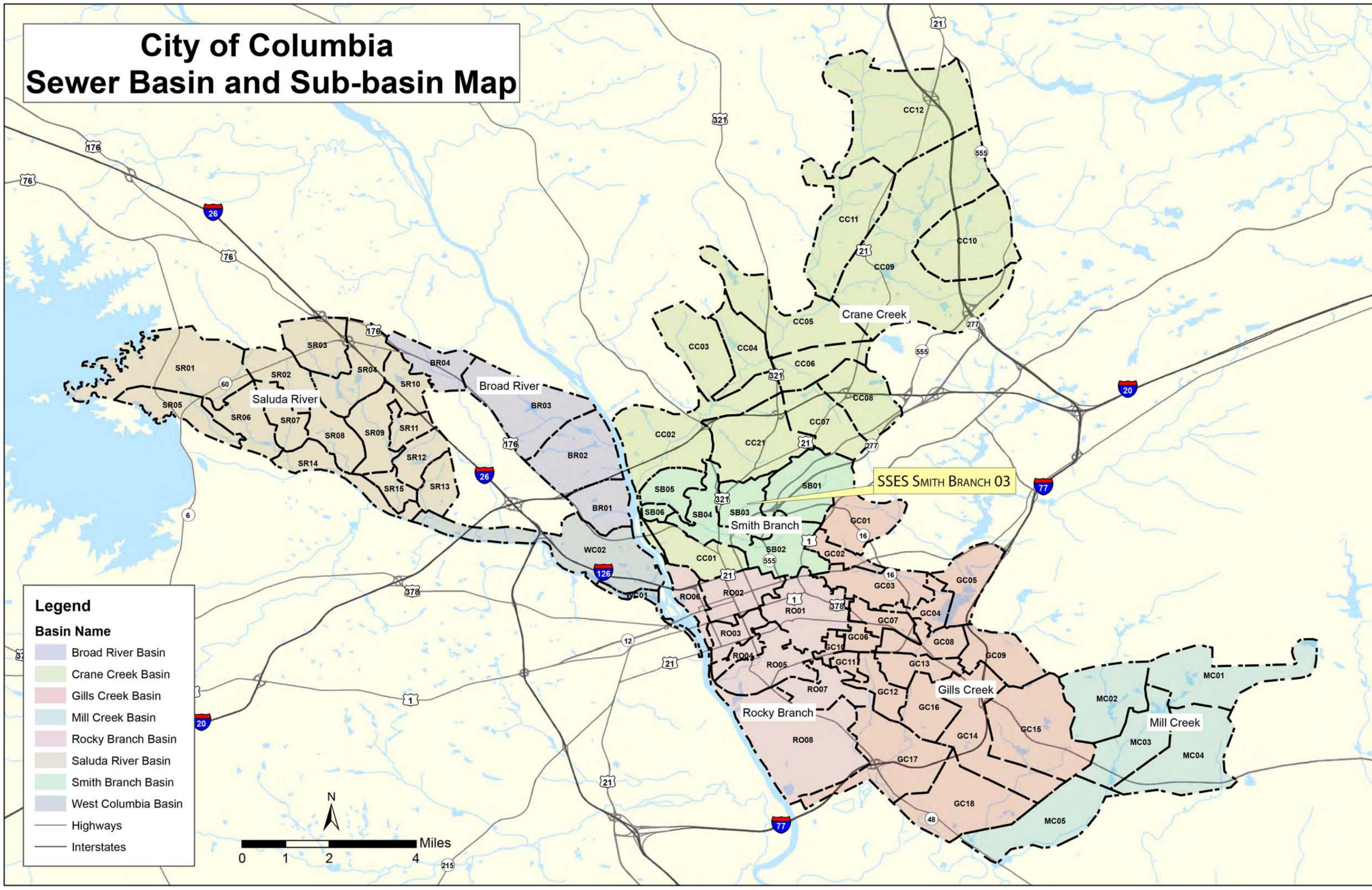
ATTEST: [Signature]
By: Opphia D. Vickers
Title: Accounting Services Manager

RECOMMENDED FOR APPROVAL:

EXECUTED by the Department of Utilities & Engineering, Compliance Division on this 23rd
day of March, 2016.

By: [Signature]
Title: Compliance Administrator

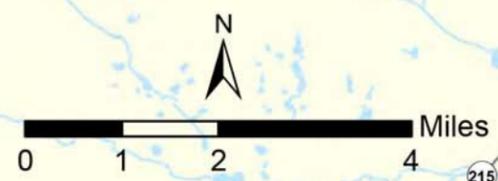
City of Columbia Sewer Basin and Sub-basin Map



Legend

Basin Name

- Broad River Basin
- Crane Creek Basin
- Gills Creek Basin
- Mill Creek Basin
- Rocky Branch Basin
- Saluda River Basin
- Smith Branch Basin
- West Columbia Basin
- Highways
- Interstates



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