



CITY OF COLUMBIA
SOUTH CAROLINA

INTER-OFFICE MEMORANDUM

TO: Ms. Teresa Wilson
City Manager

DATE: October 29, 2013

FROM: Shannon S. Lizewski
Contracts Administrator

INITIAL: *Kimberley Roof
for Shannon Lizewski*

SUBJECT: **COUNCIL AGENDA ITEM:** Agreement for Engineering Services for Black & Veatch for Regulatory Compliance Consulting for the Metropolitan Wastewater Treatment Plant; CIP Project SS7256

The enclosed subject Agreement provides for the engineering consulting services relating to the process control matters, assessment of the existing on-site laboratory, evaluation of the existing industrial pretreatment program, and oversight of installation of process monitoring installation. A complete Scope of Services is outlined in the attached package.

Staff has negotiated with Black & Veatch Corporation to provide the above services for a not to exceed fee of \$266,000.00. The professional services budget for this project is established at \$275,000.00. Black & Veatch Corporation is an OBE firm with headquarters in Overland, KS and an office in Greenville, SC. Black & Veatch Corporation participates in the City's Mentor Protégé Program and formally mentors Howard Engineering, an FBE firm located in Marietta, SC who is providing electrical and instrumentation system design and laboratory training services at 6.2% of the contract value. The following additional sub-consultants will be utilized for this project in the following capacities:

- Shealy Environmental Services, Inc., an SBE firm located in Cayce, SC, will perform Analytical Testing Services at 7.5% of the contract value
- ICA Engineering, Inc., an OBE firm with headquarters located in Brentwood, TN and a local office in Columbia, SC, will provide Biological Process Control SOP Training at 3.75% of the contract value

Services to be performed will impact all City Council districts. The project is being funded by the Sewer Maintenance Fund (5516208-638505).

The Compliance Division has reviewed this project on behalf of the Mentor Protégé Program, the Legal Department has reviewed this Agreement, and the Director of Engineering and the Assistant City Manager for Operations recommend its approval.

/enclosures

Cc: Ms. Melissa A. Smith Gentry, P.E., ACM for Operations
Mr. Joseph D. Jaco, P.E., Director of Utilities & Engineering
Ms. Dana R. Higgins, P.E., City Engineer
Mr. Bill Davis, P.E., Wastewater Engineer

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 Black & Veatch Corporation (hereinafter referred to as the "Engineer"), for Engineer to render certain services required for design and construction of Regulatory Compliance Consulting for Metro WWTP (SS7256).

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 June 30, 2017, 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 A, attached hereto.

V. Compensation

A. The compensation paid by the City to the Engineer under this Agreement for Phase 1 (Project Coordination), shall not exceed a lump sum fee of Fifteen Thousand and No/100 (\$15,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Phase 2 (Process Control) shall not exceed a lump sum fee of Eighty-Five Thousand and No/100 (\$85,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Phase 3 (Laboratory Assessment) shall not exceed a lump sum fee of Forty-Two Thousand and No/100 (\$42,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Phase 4 (IPP Assessment) shall not exceed a lump sum fee of Thirty-Nine Thousand and No/100 (\$39,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Phase 5 (Process Instrumentation and Installation Oversight) shall not exceed a lump sum fee of Fifteen Thousand and No/100 (\$15,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Analytical Testing shall be based on the Laboratory Analysis Rate Schedule as provided for in Exhibit B.1, and shall not exceed Twenty Thousand and No/100 (\$20,000.00) dollars.

The compensation paid by the City to the Engineer under this Agreement for Phase 6 (Additional Consulting Services) shall be based on the Hourly Rate Schedule as provided for in Exhibit B, and shall not exceed Fifty Thousand and No/100 (\$50,000.00) dollars.

The total compensation paid by the City to the Engineer under this Agreement shall not exceed Two Hundred, Sixty-Six Thousand and No/100 (\$266,000.00) dollars.

B. 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 B or Exhibit B.1 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, Section 11.71, 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. 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, 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.

VIII. 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.

IX. 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 **plus fifteen percent** 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.

X. 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.

XI. 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: Black & Veatch Corporation, P.O. Box 803823, Kansas City, MO 64180-3823.

XII. 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: _____
City Manager

Black & Veatch Corporation

Witness

By: _____
Title:

RECOMMENDED BY: _____ Director of Utilities and Engineering

RECOMMENDED BY: _____ Assistant City Manager for Operations

BV.SSCONORD whd/sl

**EXHIBIT A
TO
CONTRACT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SCOPE OF SERVICES

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

Black & Veatch (Engineer) will serve as the City of Columbia's (City's) professional engineering representative in those phases of the Project to which this Contract applies and will provide consultation and advice to the City during the performance of their services. The Engineer will provide engineering consulting services for the Regulatory Compliance Consulting Project for the Metro Wastewater Treatment Plant (WWTP).

The project consists of engineering consultation on process control matters, assessment of the existing on-site laboratory, evaluation of the existing industrial pretreatment program, and oversight of installation of process monitoring instrumentation. Specific components of the overall project include the following:

- Identification and documentation of biological process measures to manage and control nitrification within the existing treatment system, based on the existing plant configuration and unit processes. These measures will be incorporated into standard operating procedures (SOPs) and be documented in the format of the existing Metro WWTP Operation and Maintenance Manual. Training will be provided to Metro WWTP staff on the new SOPs.
- Review of process instrumentation to assess the condition of the equipment. Utilizing the previous instrumentation inventory information by Metro WWTP staff and others, develop a condition assessment report and provide recommendations for instrumentation maintenance and/or replacement. Design and prepare specifications for new instrumentation that will be included in the construction documents for the non-potable water system improvements. Development of a scope of services for a plant-wide process instrumentation maintenance contract. Development of a request for qualifications and request for proposals and evaluation of submittals. Negotiation of contract terms with the selected vendor. The City will be responsible for implementation of final maintenance contract.
- Identification and quantification of high strength waste streams to determine potential impact on the Metro WWTP's biological process and disinfection

effectiveness. These waste streams may include landfill leachate (hailed or pumped), centrifuge centrate, dissolved air flotation system underflow, other hauled waste, plant process washdown, and other potential streams. Emphasis shall be placed on the landfill leachate, as data to date has shown it to be of greatest concern. Funding of \$20,000 is provided for sampling, analysis, and characterization of the high strength waste streams. This task is only for collection of monitoring data and does not include evaluation of impacts on the treatment plant. City will be responsible for providing flow information for recycle streams generated within the site of the metro wastewater treatment plant.

- Perform a Gap Analysis on the existing on-site laboratory and document necessary improvements, budget requirements, etc. needed to achieve laboratory certification.
- Perform a Gap Analysis on the current industrial pretreatment program to identify areas of deficiency and provide recommendations for improvements.
- Provide oversight of installation of residual chlorine and ammonia analyzers for compliance with recently submitted Corrective Action Plan to address fecal coliform issues.

Work shall begin upon execution of this Agreement, and work under any other phase shall proceed only after the City has authorized the Engineer in writing to proceed.

Any work requested by the City that is not included in the items listed below shall be classified as Supplemental Services.

PHASE 1 – PROJECT COORDINATION

The Project Coordination phase will include general project administration duties and preparation of project management documents, including project budget, schedule, and quality assurance and quality control plan. In addition, this phase will include reviewing ongoing activities, coordination with sub-consultants, monitoring the project schedule and budget, reviewing current progress with the City on a regular basis, and discussing issues with the City as they are noted.

A. Preliminary and General Work

1. Conduct a project initiation meeting to clarify City's requirements for the Project, review pertinent available data, review project staffing and organization, present initial work plan, and review initial work schedule.
2. Conduct project meetings on a monthly basis and at milestones in the detailed task descriptions in this Scope of Services. Where possible, the monthly project meetings will be held to coincide with the milestone meetings.
3. Prepare and distribute meeting minutes for project review meetings.

4. Review City-furnished front-end documents, general conditions, special conditions, standard specifications, and standard details. Meet with City to resolve review comments, and revise Engineer's standard documents accordingly.
5. Prepare monthly project status report for City's Project Manager to accompany engineering services invoice. Status reports to include the following:
 - a. Status of work done on each task.
 - b. Discussion of project issues.
 - c. Project budget update.
 - d. Project schedule update.
6. Coordinate work with Engineer's subconsultants to include scheduling, billing, review of deliverables, etc.
7. Provide project information and coordinate with other consultants contracted by the City pertaining to related issues whereby multiple projects share a common process or function and/or are within the immediate vicinity of each other.

B. Data Collection and Review

1. Develop a comprehensive data request for the City to include any necessary operating information, previous engineering studies, existing design information, existing record drawings, etc.
2. Perform one site visit to review project site and determine any field conditions that must be considered during design.

PHASE 2 – PROCESS CONSULTING

The Process Consulting phase is the segment of the project in which the plant's biological process is reviewed and recommendations made to manage and control nitrification in the process. A review of process instrumentation will be provided with recommendations for repair and/or replacement of instruments as required. In addition as part of this phase, an analytical testing allowance is included to assist with characterizing high strength waste streams and evaluating their impact on the Metro WWTP's biological process and disinfection effectiveness. The following tasks and subtasks will be performed during this phase:

- A. Development of Biological Process Control SOPs** - The Metro WWTP's biological processes will be reviewed and a set of standard operating procedures (SOPs) developed based on existing unit processes. The goal of these SOPs will be to assist the plant operations staff with the control of nitrification within the process. These SOPs are intended to be a dynamic document that can be updated in the future as process improvements are implemented. The SOPs will be developed in a format agreed upon

with Metro WWTP operating staff. Training on the SOPs will be provided by a subconsultant and these costs are covered under an allowance.

- B. Condition Assessment of Process Instrumentation** – The existing Metro WWTP process instrumentation will be reviewed to assess its condition. Existing inventory information developed by Metro WWTP staff and others will be reviewed. Items such as manufacturer preference, effectiveness of location, remaining service life, and physical condition will be taken into consideration. A condition assessment report will be developed and will include recommendations for instrumentation maintenance and/or replacement. This subtask also includes development of a scope of services for a plant-wide process instrumentation maintenance contract. A request for qualifications and request for proposals for vendors will be developed and responses evaluated. The contract terms will be negotiated with the selected vendor.
- C. Analytical Sampling** - Provide sampling, analysis, and data evaluation of high strength waste and other plant process streams to properly characterize these streams and assist with evaluating resulting secondary effluent conditions and disinfection response. Prior to commencement of sampling, a monitoring plan will be prepared and submitted to the City for review. Funding of \$20,000 is provided for these services.

PHASE 3 – LABORATORY ASSESSMENT

The City has requested that the Engineer perform an assessment of the Metro WWTP laboratory and provide recommendations for necessary improvements to provide reliable data for process control and to achieve certification for certain compliance parameters. This assessment will be conducted in the form of a Gap Analysis. The following specific tasks will be performed during this phase:

- A. Laboratory Review** - The goal of this task is to determine the current Metro WWTP laboratory conditions. The laboratory supports multiple internal clients with a variety of sampling, analytical, data management, and reporting requirements.
1. Identify and confirm the various internal laboratory clients and develop a listing of sampling, analytical, data management, and reporting requirements. Identify and review the work for regulatory purposes versus process control requirements.
 2. Develop a process specific review for each of the internal clients' requirements. Specifically, the review process will include but not be limited to the following: work flow diagram development, sample collection protocol, chain of custody protocol, analytical techniques and standard operating procedures for each analysis, laboratory equipment condition/needs assessment, and laboratory data management.
 3. Review laboratory staffing, both numerical and qualifications, in relationship to the current and future demands of the internal clients.

4. Review of the laboratory physical space to ensure the current space and configuration is adequate for the current and future demands of the internal clients.

B. Laboratory Training - Provide training to the laboratory staff which will consist of the following:

1. A written training plan that will cover the requirements and recommended improvements to the laboratory monitoring and QA/QC program.
2. Five (5) days of classroom and in-laboratory instruction and reference materials on the laboratory modifications and procedures.

C. Gap Analysis Documentation – Produce a draft Gap Analysis Report documenting the findings and recommendations, including estimates of costs for equipment and or staffing improvements or additions. In addition, the report will outline the necessary steps to obtain laboratory certification for recommended parameters. Submit five (5) copies of the draft report to the City for review. Attend one review meeting with City staff to receive comments on the draft report. Modify the report as required and provide five (5) final copies of the Gap Analysis.

PHASE 4 – INDUSTRIAL PRETREATMENT PROGRAM ASSESSMENT

This phase of the project includes auditing the City’s current industrial pretreatment program (IPP) and providing training to the City’s industrial pretreatment coordinator and additional staff. This assessment will be conducted in the form of a Gap Analysis. The following specific tasks will be performed during this phase:

A. Audit and Assessment - Conduct an audit of the City’s IPP to identify potential areas of noncompliance or necessary improvement. This will include reviewing the following items:

1. City industrial inspection and monitoring records.
2. Industrial user self-monitoring records.
3. Status of industrial user permit applications, industrial user monitoring, industrial user inspections, industrial user violations, compliance activities and permit renewals.
4. Existing Sewer Use Ordinance.
5. Existing evaluation of technically based local limits / headworks loading.
6. Status of submittals to the South Carolina Department of Health and Environmental Control for such items as the annual report, responses to IPP compliance reviews, etc.
7. Management of data submitted for review under the IPP.
8. Compliance with proposed or anticipated Federal effluent guidelines.

The audit will not examine issues related to billing and collection of surcharge, laboratory data, and industrial issues related to stormwater.

C. IPP Training - Provide training to the IPP coordinator which will consist of the following:

3. A written training plan that will cover the requirements and recommended improvements for the IPP.
4. Two (2) days of classroom instruction and reference materials on the IPP.
5. Two (2) days of site visits with the IPP coordinator to industrial customers to perform industrial inspections.

D. IPP Gap Analysis and Training Documentation – Produce a draft Gap Analysis Report documenting the findings and recommendations of the audit and assessment conducted under item A of this phase. The report will include estimates of costs for equipment, follow-up sampling and/or staffing improvements or additions. The report will also provide documentation of the training materials and observations from the training exercise from item B of this phase. Submit five (5) copies of the draft report to the City for review. Attend one review meeting with City staff to receive comments on the draft report. Modify the report as required and provide five (5) final copies of the Gap Analysis.

PHASE 5 – PROCESS INSTRUMENTATION INSTALLATION OVERSIGHT

This phase includes the oversight of the contractor installation of process instrumentation associated with the Corrective Action Plan for fecal coliform excursions. The instruments include chlorine residual analyzers and ammonia analyzers. Specific tasks include the following:

A. Shop Drawing Submittal Review – Review drawings and other data submitted by the Contractor as required by the construction contract documents. Engineer’s review shall be for general conformity to the construction contract documents and shall not relieve the Contractor of any of his contractual responsibilities. Such reviews shall not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto.

B. Requests for Information, Change Orders, and Claims -

1. Requests for Information – Interpret construction contract documents when requested by City or the Contractor. Requests for clarification or information shall be in writing, and copies of Engineer’s response shall be distributed to City.
2. Change Orders – Review City or Contractor requests for project changes.
 - Review documentation.
 - Prepare any additional documentation required.
 - Administer the processing of change orders.

- Review applications for extension of construction time.
- Evaluate the cost and scheduling.
- Submit recommendations to City.
- Assist City in negotiations with Contractor to obtain a fair price for the work.

3. Claims – Act on claims of City and the Contractor relating to the acceptability of the work or the interpretation of the requirements of the construction contract documents.

- C. Contractor Pay Requests** – Review and process the Contractor’s monthly payment requests, and forward to City if appropriate. Engineer’s review shall be for the purpose of making a full independent mathematical check of the Contractor’s payment request.
- D. Site Visits** – Project design team personnel with particular areas of responsibilities for the project shall visit the site to observe construction and to confer with City and Contractor. Three visits to the project site are included.
- E. Final Inspection** - Upon substantial completion, inspect the construction work and prepare a punch list of those items to be completed or corrected before final completion of the project. Submit results of the inspection to City and the Contractor.

PHASE 6 – ADDITIONAL CONSULTING SERVICES

Additional consulting services are those services not covered in the scope of work for this Contract. These services will be performed at City’s request with compensation adjustments. Additional consulting services that City might choose to add to the scope of services include, but are not limited to, the following items.

1. General:

- a. Safety Assessments (Safety issues regarding the design of new facilities and equipment related to this project are included in the scope of services and compensation for this Contract).
- b. Security Assessments.
- c. Value Engineering reviews and services.
- d. Renderings or photo realistic drawings.
- e. Establishing a project communications site.
- f. Supplemental engineering work required to meet the requirements of regulatory or

funding agencies that become effective subsequent to the date of this agreement.

- g. Special consultants or independent professional associates requested or authorized by City.
- h. Assistance with bid protests and rebidding.
- i. Preparation for litigation, arbitration, or other legal or administrative proceedings; and appearances in court or at arbitration sessions in connection with bid protests, change orders, or construction incidents.
- j. Additions to an engineering report or other document to update or revise original recommendations.
- k. Revision of designs, drawings, and specifications to incorporate changes arising from Value Engineering review.
- l. Preparing measured drawings.
- m. Design of deep foundation support systems for structures.

2. Rights-of-way and property acquisition:

- a. Aerial photography.
- b. Photographs or videotapes of the construction site topographic and infrastructure features along pipelines or access roads.
- c. Setting horizontal and vertical controls and locating street, road, highway, and utility rights-of-way and critical property corners and to provide additional records on rights-of-way and property information.
- d. Prepare title reports on each parcel of property for purchase or arranging for easements or rights-of-way.
- e. Prepare legal descriptions for the City's use in acquiring property or rights-of-way and easements.
- f. Services of a qualified appraiser to appraise the property or rights-of-way and easements to be acquired, and to meet and negotiate with the property owners.
- g. Engineering assistance to City in negotiation meetings and condemnation proceedings.
- h. Surveying to re-establish streets to preconstruction grade, referencing and re-establishing land surveying monuments, and marking the easement or right-of-way

limits.

3. Environmental Assessment:

- a. Environmental assessment reports and/or environmental impact statements.
- b. Cultural resources and/or archaeological study and reports.
- c. Archaeological consultations regarding artifacts that may be uncovered during construction.

4. Testing:

- a. Laboratory and field testing and any reports or studies on materials and equipment requested by City, not specifically covered in the scope.
- b. Observing factory tests and/or field retesting of equipment that fails to pass the initial test.

5. Hazardous Environmental Conditions:

- a. Remedial investigation/feasibility study or Phase I environmental site assessment to determine the quantity and location of contamination.
- b. Conduct asbestos or lead based paint abatement or other hazardous material abatement of existing facilities.

6. Conducting pilot plant studies and tests.

7. Support services for additional work in connection with public information activity.

8. Services During Construction:

- a. Submittal of a schedule for field staffing requirements and cash flow projections for engineering services during construction, along with a standard report format, to City.
- b. Visits to the construction site or to City's location in excess of the number of such trips and the associated time set forth in other phases.
- c. Receiving wage rate information submitted by the Contractor and forwarding the information to City.
- d. Preparation of a master construction schedule from individual schedules submitted by construction contractors, and coordination and resolution of conflicts with contractors' schedules.
- e. Assistance in financially related transactions for the project.

- f. Special reports requested by City concerning facilities operation and personnel matters during the operation startup period.
 - g. Evaluation of unusually complex or unreasonably numerous claims submitted by the Contractor or others in connection with the work.
 - h. Review and analysis of claims for differing subsurface and physical conditions submitted by the Contractor or others in connection with the work.
9. Services for making revisions to drawings and specifications made necessary by the acceptance of substitutions proposed by the Contractor; and services after the award of each contract for evaluating and determining the acceptability of substitutions proposed by the Contractor.
10. Services resulting from significant delays, changes, or price increases caused directly or indirectly by shortages of materials, equipment, or energy.
11. Additional or extended services during construction made necessary by 1) work damaged by fire or other cause during construction, 2) a significant amount of defective or neglected work by any Contractor, 3) acceleration of the progress schedule involving service beyond normal working hours, 4) default by any Contractor, and 5) failure of the Contractor to complete the work within the construction contract time.
12. Changes in the general scope, extent, or character of the project, including, but not limited to:
- a. Changes in size or complexity.
 - b. City's schedule, design, or character of construction.
 - c. Method of financing.
 - d. Revision of previously accepted studies, reports, design documents, or construction contract documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes, or orders enacted subsequent to the preparation of such studies, reports, documents, or designs; or are required by any other causes beyond Engineer's control.

CITY RESPONSIBILITIES

The City will furnish, as required by the work and not at the expense of the Engineer, the following items:

1. All maps, drawings, reports, records, audits, annual reports, and other data that are available in the files of the City and which may be useful in the work involved under this contract.
2. Access to public and private property when required in performance of the Engineer's services.
3. Manage the performance of other consultants under direct contract to City necessary for the Project. (Coordination and sharing of information with other consultants for the purpose of related project issues is included in this scope of services and compensation).
4. Notwithstanding anything to the contrary contained herein, City assumes sole responsibility and waives all rights and claims against Engineer for all loss of or damage to property owned by or in the custody of City and any items at the jobsite or in transit thereto (including, but not limited to, construction work in progress), whether such loss or damage results from tortious or non-tortious causes. (Engineer shall be held responsible for repair/replacement of any loss of or damage to property, structure, equipment, etc., specifically caused by the Engineer or a subcontractor of the Engineer).

**EXHIBIT B
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

COMPENSATION

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

For the services outlined in this Contract, the City agrees to pay the Engineer as follows:

- A. For Phases 1 through 5 (excluding analytical sampling in Exhibit A Phase 2.C), payment shall be authorized and allocated according to project phases, for a total project lump sum of one hundred ninety six thousand and no/100 dollars (\$196,000).

For the Analytical Sampling referenced in Exhibit A Phase 2.C, compensation shall be billed on a per cost basis of subcontractor billings per the attached Laboratory Analysis Rate Schedule Exhibit B.1 times 1.0 and reimbursable expenses, with a total amount not to exceed twenty thousand dollars (\$20,000.00). Reimbursable expenses shall include such items as telephone, fax, computers, reproduction, postage, mileage, equipment, and supplies.

The maximum billed for the services outlined above shall not exceed a two hundred **sixteen** thousand and no/100 dollars (\$216,000.00) without further authorization from the City. Work on these tasks will begin upon written notification by the City to proceed.

- B. For Phase 6, Additional Consulting Services, the Engineer's compensation shall be in accordance with the Hourly Rate Schedule shown below in this Exhibit times a multiplier of 2.3. Compensation for reimbursable expenses shall be the actual cost of these expenses times a multiplier of 1.1. The total fee for Phase 6 services shall not exceed fifty thousand and no/100 dollars (\$50,000.00) without further authorization from the City. Any work on this phase will only begin upon written notification by the City to proceed.

C. The total project fee shall be broken down by phases as listed below:

Phase Description	Engineering Fee
Phase 1 – Project Coordination	\$ 15,000
Phase 2 – Process Consulting (excluding analytical testing allowance)	\$ 85,000
Phase 3 – Laboratory Assessment	\$ 42,000
Phase 4 – IPP Assessment	\$ 39,000
Phase 5 – Process Instrumentation Installation Oversight	\$ 15,000
Subtotal for Lump Sum Services	\$ 196,000
Analytical Sampling (cost reimbursable tasks)	\$ 20,000
Phase 6 - Additional Consulting Services (cost reimbursable tasks)	\$ 50,000
Subtotal Cost Reimbursable Tasks	\$ 70,000
Total Lump Sum Fee	\$ 266,000

D. Monthly payments shall be made to the Engineer by the City based on the Engineer's statement. For payroll multiplier items, the statement shall be itemized to indicate the amount of work performed and the associated reimbursable expenses and subcontract costs.

The entire amount of each statement shall be due and payable upon receipt by the City.

Hourly Rate Schedule

Engineer shall be allowed to adjust employee hourly rates on an annual basis starting in July 2014. Adjustments shall not exceed 3% per year. Engineer will submit to the City, for approval, the proposed hourly rates. Approval of adjusted hourly rates by the City does not affect the total project ceiling for compensation under this Agreement.

Hourly Payroll Rates for Personnel	
Category of Personnel	Labor and Overhead Rate / Hour
Project Manager	\$90
Process Specialist	\$88
Senior Process Specialist	\$102
Senior Project Engineer	\$72
Project Engineer II	\$54
Project Engineer I	\$42
Operations Specialist	\$42
Senior Engineering Technician	\$50
Engineering Technician	\$32
Senior Structural Engineer	\$80
Senior Electrical Engineer	\$80
Accountant	\$38
Senior Administrative Assistant	\$44
Administrative Assistant	\$28

Project Team

The following key project team members are assigned to perform the services required as delineated herein:

Project Manager – Clint Shealy
 Senior Project Engineer – Don Franklin
 Senior Process Specialist – Gary Hunter
 Operations Specialist – Ginny Sherman

Subconsultants

- Howard Engineering (Protégé Firm, FBE) – Electrical, instrumentation and controls engineering services and laboratory training services in the amount of \$16,500.
- Shealy Environmental Laboratory (SBE) – Analytical testing services allowance of \$20,000.
- **ICA Engineering, Inc.** (Non M/F/SBE) – Operator training services in the amount of \$10,000.

**EXHIBIT B.1
LABORATORY ANALYSIS RATE SCHEDULE**

PARAMETER	UNIT COST
TSS	\$15
VSS	\$15
COD	\$25
VFA (grab)	\$135
BOD5	\$30
cBOD5	\$30
TKN	\$25
NH3N	\$20
NOxN	\$40
NO3N	\$15
NO2N	\$15
cyanide (total)	\$25
TP	\$20
PO4P	\$20
ALK	\$12
pH	\$5
Ca	\$12
Mg	\$12

**EXHIBIT C
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SCHEDULE

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

The estimated schedule to complete the project is as follows:

Phase Description	Estimated Completion Duration
Phase 1 – Project Coordination	3 months from NTP (services through life of project)
Phase 2 – Process Consulting	2 months from NTP
Phase 3 – Laboratory Assessment	2 months from NTP
Phase 4 – IPP Assessment	3 months from NTP
Phase 5 – Process Instrumentation Installation Oversight	2 months from NTP
Phase 6 – Additional Consulting Services Allowance	As needed

**EXHIBIT D
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SUBCONSULTANT FIRM INFORMATION RECORDS

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

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 Number	Group (MBE, FBE SBE, Non M/F/SBE)	Services to be Provided	Dollar Value of Services
Howard Engineering (Protégé Firm) PO Box 237 Marietta, SC 29661	Amy Howard, (864) 836-0440	FBE (Protégé)	Electrical and Instrumentation System Design, Laboratory Training	\$16,500.00
Shealy Environmental Services, Inc. 106 Vantage Point Drive Cayce, SC 29033	Michael Kilpatrick, (704) 589-9802	SBE	Analytical Testing	\$20,000.00
ICA Engineering, Inc. 501 Huger Street Columbia, SC 29201	Ken Schnaars, (615) 430-2381	Non M/F/SBE	Biological Process Control SOP Training	\$10,000.00

**EXHIBIT A
TO
CONTRACT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SCOPE OF SERVICES

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

Black & Veatch (Engineer) will serve as the City of Columbia's (City's) professional engineering representative in those phases of the Project to which this Contract applies and will provide consultation and advice to the City during the performance of their services. The Engineer will provide engineering consulting services for the Regulatory Compliance Consulting Project for the Metro Wastewater Treatment Plant (WWTP).

The project consists of engineering consultation on process control matters, assessment of the existing on-site laboratory, evaluation of the existing industrial pretreatment program, and oversight of installation of process monitoring instrumentation. Specific components of the overall project include the following:

- Identification and documentation of biological process measures to manage and control nitrification within the existing treatment system, based on the existing plant configuration and unit processes. These measures will be incorporated into standard operating procedures (SOPs) and be documented in the format of the existing Metro WWTP Operation and Maintenance Manual. Training will be provided to Metro WWTP staff on the new SOPs.
- Review of process instrumentation to assess the condition of the equipment. Utilizing the previous instrumentation inventory information by Metro WWTP staff and others, develop a condition assessment report and provide recommendations for instrumentation maintenance and/or replacement. Design and prepare specifications for new instrumentation that will be included in the construction documents for the non-potable water system improvements. Development of a scope of services for a plant-wide process instrumentation maintenance contract. Development of a request for qualifications and request for proposals and evaluation of submittals. Negotiation of contract terms with the selected vendor. The City will be responsible for implementation of final maintenance contract.
- Identification and quantification of high strength waste streams to determine potential impact on the Metro WWTP's biological process and disinfection

effectiveness. These waste streams may include landfill leachate (hailed or pumped), centrifuge centrate, dissolved air flotation system underflow, other hauled waste, plant process washdown, and other potential streams. Emphasis shall be placed on the landfill leachate, as data to date has shown it to be of greatest concern. Funding of \$20,000 is provided for sampling, analysis, and characterization of the high strength waste streams. This task is only for collection of monitoring data and does not include evaluation of impacts on the treatment plant. City will be responsible for providing flow information for recycle streams generated within the site of the metro wastewater treatment plant.

- Perform a Gap Analysis on the existing on-site laboratory and document necessary improvements, budget requirements, etc. needed to achieve laboratory certification.
- Perform a Gap Analysis on the current industrial pretreatment program to identify areas of deficiency and provide recommendations for improvements.
- Provide oversight of installation of residual chlorine and ammonia analyzers for compliance with recently submitted Corrective Action Plan to address fecal coliform issues.

Work shall begin upon execution of this Agreement, and work under any other phase shall proceed only after the City has authorized the Engineer in writing to proceed.

Any work requested by the City that is not included in the items listed below shall be classified as Supplemental Services.

PHASE 1 – PROJECT COORDINATION

The Project Coordination phase will include general project administration duties and preparation of project management documents, including project budget, schedule, and quality assurance and quality control plan. In addition, this phase will include reviewing ongoing activities, coordination with sub-consultants, monitoring the project schedule and budget, reviewing current progress with the City on a regular basis, and discussing issues with the City as they are noted.

A. Preliminary and General Work

1. Conduct a project initiation meeting to clarify City's requirements for the Project, review pertinent available data, review project staffing and organization, present initial work plan, and review initial work schedule.
2. Conduct project meetings on a monthly basis and at milestones in the detailed task descriptions in this Scope of Services. Where possible, the monthly project meetings will be held to coincide with the milestone meetings.
3. Prepare and distribute meeting minutes for project review meetings.

4. Review City-furnished front-end documents, general conditions, special conditions, standard specifications, and standard details. Meet with City to resolve review comments, and revise Engineer's standard documents accordingly.
5. Prepare monthly project status report for City's Project Manager to accompany engineering services invoice. Status reports to include the following:
 - a. Status of work done on each task.
 - b. Discussion of project issues.
 - c. Project budget update.
 - d. Project schedule update.
6. Coordinate work with Engineer's subconsultants to include scheduling, billing, review of deliverables, etc.
7. Provide project information and coordinate with other consultants contracted by the City pertaining to related issues whereby multiple projects share a common process or function and/or are within the immediate vicinity of each other.

B. Data Collection and Review

1. Develop a comprehensive data request for the City to include any necessary operating information, previous engineering studies, existing design information, existing record drawings, etc.
2. Perform one site visit to review project site and determine any field conditions that must be considered during design.

PHASE 2 - PROCESS CONSULTING

The Process Consulting phase is the segment of the project in which the plant's biological process is reviewed and recommendations made to manage and control nitrification in the process. A review of process instrumentation will be provided with recommendations for repair and/or replacement of instruments as required. In addition as part of this phase, an analytical testing allowance is included to assist with characterizing high strength waste streams and evaluating their impact on the Metro WWTP's biological process and disinfection effectiveness. The following tasks and subtasks will be performed during this phase:

- A. Development of Biological Process Control SOPs** - The Metro WWTP's biological processes will be reviewed and a set of standard operating procedures (SOPs) developed based on existing unit processes. The goal of these SOPs will be to assist the plant operations staff with the control of nitrification within the process. These SOPs are intended to be a dynamic document that can be updated in the future as process improvements are implemented. The SOPs will be developed in a format agreed upon

with Metro WWTP operating staff. Training on the SOPs will be provided by a subconsultant and these costs are covered under an allowance.

- B. Condition Assessment of Process Instrumentation** – The existing Metro WWTP process instrumentation will be reviewed to assess its condition. Existing inventory information developed by Metro WWTP staff and others will be reviewed. Items such as manufacturer preference, effectiveness of location, remaining service life, and physical condition will be taken into consideration. A condition assessment report will be developed and will include recommendations for instrumentation maintenance and/or replacement. This subtask also includes development of a scope of services for a plant-wide process instrumentation maintenance contract. A request for qualifications and request for proposals for vendors will be developed and responses evaluated. The contract terms will be negotiated with the selected vendor.
- C. Analytical Sampling** - Provide sampling, analysis, and data evaluation of high strength waste and other plant process streams to properly characterize these streams and assist with evaluating resulting secondary effluent conditions and disinfection response. Prior to commencement of sampling, a monitoring plan will be prepared and submitted to the City for review. Funding of \$20,000 is provided for these services.

PHASE 3 – LABORATORY ASSESSMENT

The City has requested that the Engineer perform an assessment of the Metro WWTP laboratory and provide recommendations for necessary improvements to provide reliable data for process control and to achieve certification for certain compliance parameters. This assessment will be conducted in the form of a Gap Analysis. The following specific tasks will be performed during this phase:

- A. Laboratory Review** - The goal of this task is to determine the current Metro WWTP laboratory conditions. The laboratory supports multiple internal clients with a variety of sampling, analytical, data management, and reporting requirements.
1. Identify and confirm the various internal laboratory clients and develop a listing of sampling, analytical, data management, and reporting requirements. Identify and review the work for regulatory purposes versus process control requirements.
 2. Develop a process specific review for each of the internal clients' requirements. Specifically, the review process will include but not be limited to the following: work flow diagram development, sample collection protocol, chain of custody protocol, analytical techniques and standard operating procedures for each analysis, laboratory equipment condition/needs assessment, and laboratory data management.
 3. Review laboratory staffing, both numerical and qualifications, in relationship to the current and future demands of the internal clients.

4. Review of the laboratory physical space to ensure the current space and configuration is adequate for the current and future demands of the internal clients.

B. Laboratory Training - Provide training to the laboratory staff which will consist of the following:

1. A written training plan that will cover the requirements and recommended improvements to the laboratory monitoring and QA/QC program.
2. Five (5) days of classroom and in-laboratory instruction and reference materials on the laboratory modifications and procedures.

C. Gap Analysis Documentation – Produce a draft Gap Analysis Report documenting the findings and recommendations, including estimates of costs for equipment and or staffing improvements or additions. In addition, the report will outline the necessary steps to obtain laboratory certification for recommended parameters. Submit five (5) copies of the draft report to the City for review. Attend one review meeting with City staff to receive comments on the draft report. Modify the report as required and provide five (5) final copies of the Gap Analysis.

PHASE 4 – INDUSTRIAL PRETREATMENT PROGRAM ASSESSMENT

This phase of the project includes auditing the City’s current industrial pretreatment program (IPP) and providing training to the City’s industrial pretreatment coordinator and additional staff. This assessment will be conducted in the form of a Gap Analysis. The following specific tasks will be performed during this phase:

A. Audit and Assessment - Conduct an audit of the City’s IPP to identify potential areas of noncompliance or necessary improvement. This will include reviewing the following items:

1. City industrial inspection and monitoring records.
2. Industrial user self-monitoring records.
3. Status of industrial user permit applications, industrial user monitoring, industrial user inspections, industrial user violations, compliance activities and permit renewals.
4. Existing Sewer Use Ordinance.
5. Existing evaluation of technically based local limits / headworks loading.
6. Status of submittals to the South Carolina Department of Health and Environmental Control for such items as the annual report, responses to IPP compliance reviews, etc.
7. Management of data submitted for review under the IPP.
8. Compliance with proposed or anticipated Federal effluent guidelines.

The audit will not examine issues related to billing and collection of surcharge, laboratory data, and industrial issues related to stormwater.

C. IPP Training - Provide training to the IPP coordinator which will consist of the following:

3. A written training plan that will cover the requirements and recommended improvements for the IPP.
4. Two (2) days of classroom instruction and reference materials on the IPP.
5. Two (2) days of site visits with the IPP coordinator to industrial customers to perform industrial inspections.

D. IPP Gap Analysis and Training Documentation - Produce a draft Gap Analysis Report documenting the findings and recommendations of the audit and assessment conducted under item A of this phase. The report will include estimates of costs for equipment, follow-up sampling and/or staffing improvements or additions. The report will also provide documentation of the training materials and observations from the training exercise from item B of this phase. Submit five (5) copies of the draft report to the City for review. Attend one review meeting with City staff to receive comments on the draft report. Modify the report as required and provide five (5) final copies of the Gap Analysis.

PHASE 5 – PROCESS INSTRUMENTATION INSTALLATION OVERSIGHT

This phase includes the oversight of the contractor installation of process instrumentation associated with the Corrective Action Plan for fecal coliform excursions. The instruments include chlorine residual analyzers and ammonia analyzers. Specific tasks include the following:

A. Shop Drawing Submittal Review - Review drawings and other data submitted by the Contractor as required by the construction contract documents. Engineer's review shall be for general conformity to the construction contract documents and shall not relieve the Contractor of any of his contractual responsibilities. Such reviews shall not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto.

B. Requests for Information, Change Orders, and Claims -

1. Requests for Information - Interpret construction contract documents when requested by City or the Contractor. Requests for clarification or information shall be in writing, and copies of Engineer's response shall be distributed to City.
2. Change Orders - Review City or Contractor requests for project changes.
 - Review documentation.
 - Prepare any additional documentation required.
 - Administer the processing of change orders.

- Review applications for extension of construction time.
 - Evaluate the cost and scheduling.
 - Submit recommendations to City.
 - Assist City in negotiations with Contractor to obtain a fair price for the work.
3. Claims – Act on claims of City and the Contractor relating to the acceptability of the work or the interpretation of the requirements of the construction contract documents.
- C. Contractor Pay Requests** – Review and process the Contractor’s monthly payment requests, and forward to City if appropriate. Engineer’s review shall be for the purpose of making a full independent mathematical check of the Contractor’s payment request.
- D. Site Visits** – Project design team personnel with particular areas of responsibilities for the project shall visit the site to observe construction and to confer with City and Contractor. Three visits to the project site are included.
- E. Final Inspection** - Upon substantial completion, inspect the construction work and prepare a punch list of those items to be completed or corrected before final completion of the project. Submit results of the inspection to City and the Contractor.

PHASE 6 – ADDITIONAL CONSULTING SERVICES

Additional consulting services are those services not covered in the scope of work for this Contract. These services will be performed at City’s request with compensation adjustments. Additional consulting services that City might choose to add to the scope of services include, but are not limited to, the following items.

1. General:
 - a. Safety Assessments (Safety issues regarding the design of new facilities and equipment related to this project are included in the scope of services and compensation for this Contract).
 - b. Security Assessments.
 - c. Value Engineering reviews and services.
 - d. Renderings or photo realistic drawings.
 - e. Establishing a project communications site.
 - f. Supplemental engineering work required to meet the requirements of regulatory or

funding agencies that become effective subsequent to the date of this agreement.

- g. Special consultants or independent professional associates requested or authorized by City.
- h. Assistance with bid protests and rebidding.
- i. Preparation for litigation, arbitration, or other legal or administrative proceedings; and appearances in court or at arbitration sessions in connection with bid protests, change orders, or construction incidents.
- j. Additions to an engineering report or other document to update or revise original recommendations.
- k. Revision of designs, drawings, and specifications to incorporate changes arising from Value Engineering review.
- l. Preparing measured drawings.
- m. Design of deep foundation support systems for structures.

2. Rights-of-way and property acquisition:

- a. Aerial photography.
- b. Photographs or videotapes of the construction site topographic and infrastructure features along pipelines or access roads.
- c. Setting horizontal and vertical controls and locating street, road, highway, and utility rights-of-way and critical property corners and to provide additional records on rights-of-way and property information.
- d. Prepare title reports on each parcel of property for purchase or arranging for easements or rights-of-way.
- e. Prepare legal descriptions for the City's use in acquiring property or rights-of-way and easements.
- f. Services of a qualified appraiser to appraise the property or rights-of-way and easements to be acquired, and to meet and negotiate with the property owners.
- g. Engineering assistance to City in negotiation meetings and condemnation proceedings.
- h. Surveying to re-establish streets to preconstruction grade, referencing and re-establishing land surveying monuments, and marking the easement or right-of-way

limits.

3. Environmental Assessment:

- a. Environmental assessment reports and/or environmental impact statements.
- b. Cultural resources and/or archaeological study and reports.
- c. Archaeological consultations regarding artifacts that may be uncovered during construction.

4. Testing:

- a. Laboratory and field testing and any reports or studies on materials and equipment requested by City, not specifically covered in the scope.
- b. Observing factory tests and/or field retesting of equipment that fails to pass the initial test.

5. Hazardous Environmental Conditions:

- a. Remedial investigation/feasibility study or Phase I environmental site assessment to determine the quantity and location of contamination.
- b. Conduct asbestos or lead based paint abatement or other hazardous material abatement of existing facilities.

6. Conducting pilot plant studies and tests.

7. Support services for additional work in connection with public information activity.

8. Services During Construction:

- a. Submittal of a schedule for field staffing requirements and cash flow projections for engineering services during construction, along with a standard report format, to City.
- b. Visits to the construction site or to City's location in excess of the number of such trips and the associated time set forth in other phases.
- c. Receiving wage rate information submitted by the Contractor and forwarding the information to City.
- d. Preparation of a master construction schedule from individual schedules submitted by construction contractors, and coordination and resolution of conflicts with contractors' schedules.
- e. Assistance in financially related transactions for the project.

- f. Special reports requested by City concerning facilities operation and personnel matters during the operation startup period.
 - g. Evaluation of unusually complex or unreasonably numerous claims submitted by the Contractor or others in connection with the work.
 - h. Review and analysis of claims for differing subsurface and physical conditions submitted by the Contractor or others in connection with the work.
9. Services for making revisions to drawings and specifications made necessary by the acceptance of substitutions proposed by the Contractor; and services after the award of each contract for evaluating and determining the acceptability of substitutions proposed by the Contractor.
10. Services resulting from significant delays, changes, or price increases caused directly or indirectly by shortages of materials, equipment, or energy.
11. Additional or extended services during construction made necessary by 1) work damaged by fire or other cause during construction, 2) a significant amount of defective or neglected work by any Contractor, 3) acceleration of the progress schedule involving service beyond normal working hours, 4) default by any Contractor, and 5) failure of the Contractor to complete the work within the construction contract time.
12. Changes in the general scope, extent, or character of the project, including, but not limited to:
- a. Changes in size or complexity.
 - b. City's schedule, design, or character of construction.
 - c. Method of financing.
 - d. Revision of previously accepted studies, reports, design documents, or construction contract documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes, or orders enacted subsequent to the preparation of such studies, reports, documents, or designs; or are required by any other causes beyond Engineer's control.

CITY RESPONSIBILITIES

The City will furnish, as required by the work and not at the expense of the Engineer, the following items:

1. All maps, drawings, reports, records, audits, annual reports, and other data that are available in the files of the City and which may be useful in the work involved under this contract.
2. Access to public and private property when required in performance of the Engineer's services.
3. Manage the performance of other consultants under direct contract to City necessary for the Project. (Coordination and sharing of information with other consultants for the purpose of related project issues is included in this scope of services and compensation).
4. Notwithstanding anything to the contrary contained herein, City assumes sole responsibility and waives all rights and claims against Engineer for all loss of or damage to property owned by or in the custody of City and any items at the jobsite or in transit thereto (including, but not limited to, construction work in progress), whether such loss or damage results from tortious or non-tortious causes. (Engineer shall be held responsible for repair/replacement of any loss of or damage to property, structure, equipment, etc., specifically caused by the Engineer or a subcontractor of the Engineer).

**EXHIBIT B
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

COMPENSATION

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

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Senior Administrative Assistant	\$44
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**EXHIBIT B.1
LABORATORY ANALYSIS RATE SCHEDULE**

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BOD5	\$30
cBOD5	\$30
TKN	\$25
NH3N	\$20
NOxN	\$40
NO3N	\$15
NO2N	\$15
cyanide (total)	\$25
TP	\$20
PO4P	\$20
ALK	\$12
pH	\$5
Ca	\$12
Mg	\$12

**EXHIBIT C
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SCHEDULE

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

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**EXHIBIT D
TO
AGREEMENT FOR ENGINEERING SERVICES**

Project Name: City of Columbia – Regulatory Compliance Consulting for the
Metro Wastewater Treatment Plant
CIP # SS7256

Engineer: Black & Veatch Corporation

SUBCONSULTANT FIRM INFORMATION RECORDS

**REGULATORY COMPLIANCE CONSULTING FOR THE
METRO WASTEWATER TREATMENT PLANT**

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 Number	Group (MBE, FBE SBE, Non M/F/SBE)	Services to be Provided	Dollar Value of Services
Howard Engineering (Protégé Firm) PO Box 237 Marietta, SC 29661	Amy Howard, (864) 836-0440	FBE	Electrical and Instrumentation System Design, Laboratory Training	\$16,500.00
Shealy Environmental Services, Inc. 106 Vantage Point Drive Cayce, SC 29033	Michael Kilpatrick, (704) 589-9802	SBE	Analytical Testing	\$20,000.00
ICA Engineering, Inc. 501 Huger Street Columbia, SC 29201	Ken Schnaars, (615) 430-2381	Non M/F/SBE	Biological Process Control SOP Training	\$10,000.00