



We Are Columbia

MEETING DATE: October 18, 2016

DEPARTMENT: Utilities and Engineering

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

SUBJECT: **Contract Amendment #3 to Water and Sewer Rate Study Update Agreement with Black & Veatch Corporation**

PRESENTER: **Joey D. Jaco, PE, Director of Utilities and Engineering**

FINANCIAL IMPACT: \$53,000.00 to come from 5511706-WM4358-638305
\$53,000.00 to come from 5511706-SS7349-638305
\$55,300.00 to come from 5511706-SD8442-638305

ORIGINAL BUDGET: 150,000

CLEAN WATER 2020?: No

FEMA DR-SC4241?: No

STRATEGIC GOALS: Invest in Infrastructure

The referenced Contract Amendment is to provide a Stormwater Rate Study as well as update the City's existing Water and Sewer Rate Study. The Scope of Services is more fully described in the attached package.

Black & Veatch Corporation was selected from the Water and Sewer Rate Study RFP (ENGRFP0004-14-15).

Black & Veatch Corporation is headquartered in Kansas City, MO, however, services are being provided out of Orlando, FL. This project does not lend itself to the Mentor Protégé Program.

Staff has negotiated a fixed fee amount totaling One Hundred Sixty-One Thousand, Three Hundred Dollars and No/100 (161,300.00) for the specified needs with Black & Veatch Corporation.

There are no sub-consultants for this Amendment.

Original Agreement Amount: \$199,158.00
Contract Amendment #1 added \$20,017.00
Contract Amendment #2 added \$115,000.00
Contract Amendment #3 will add \$161,300.00
New Agreement Total: \$495,475.00

This project impacts all City Council Districts. The Legal Department has reviewed and approved the Amendment language and the Procurement & Contracts Director, Utilities & Engineering Director and ACM for Operations recommend its approval.

ATTACHMENTS:

- FY 2018 Columbia SC Letter Proposal (PDF)
- BlackandVeatch.2016.WaterandSewerRateStudy.CA3. (PDF)

**PRACTICAL SOLUTIONS.
PROVEN BUSINESS EXPERIENCE.
COMMITTED PARTNERSHIP.**

FINANCIAL PLANNING SERVICES

City of Columbia, South Carolina

6 OCTOBER 2016



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Cover Letter

October 11, 2016

City of Columbia, S.C.
Mr. Joey Jaco, Director of Utilities and Engineering
Attn: Water and Sewer Rate Study Update
PO Box 147
Columbia, SC 29217

Dear Mr. Jaco,

Black & Veatch Management Consulting, LLC (Black & Veatch) is pleased to present our proposal for providing Water and Sewer Rate Study Update services for the City of Columbia, S.C. (City). Black & Veatch is uniquely qualified for this project for the following reasons:

- **Our Industry Thought Leadership:** Our professionals have served as both contributing authors and as peer reviewers for the water, sewer, and stormwater utility industry rate setting manuals and actively contribute to various industry committees.
- **Proven Project Team with direct, on-point experience with the City's issues:** We understand the industry and challenges faced by the City on a daily basis. In addition, the Black & Veatch team has served the City in successfully completing previous financial planning engagements. Our experienced team is committed to delivering a comprehensive scope of services that will help the City navigate its complex challenges and business environment with best practice solutions through their technical capabilities and direct experience with projects similar in scope.
- **Our professionals possess unique utility financial planning and rate model development capabilities:** We will provide the City with a thorough financial approach and dynamic rate models for use in future planning and rate making. Our model is comprehensive and flexible to consider unique aspects of the City's customers, systems, and processes.

This proposal is a statement of our commitment to provide the leadership, resources, and technical skill sets necessary to successfully serve the City. We look forward to discussing your needs, our qualifications, and potential long-term solutions that our company can provide. Should you have any questions about our proposal please contact Robert Chambers at (407-419-3574) or chambersr@bv.com. We look forward to serving you on this important engagement.

Very truly yours,
BLACK & VEATCH MANAGEMENT CONSULTING, LLC



Ralph Eberts
Executive Vice President

Approach

The purpose of the financial planning scope of work detailed herein is to perform a general review of specific service rates provided by the City. As a part of the scope of work detailed herein, Black & Veatch will perform a Water and Sewer Rate Study Update, a Stormwater Rate Study, and a review of the City’s existing Developer Participation Rate specific to the City Water and Sewer System.

Black & Veatch will conduct a detailed review of the services listed herein and provide recommendations to reflect the adequacy of rates, the cost to provide the respective services, and develop a plan to maintain the appropriate level of rates to maintain the required revenues and meet the financial planning objectives of the City.

Figure 1 below presents the general approach utilized by Black & Veatch in conducting cost of service and rate studies. For the purpose of the analysis detailed herein, the approach detailed below will be utilized to conduct the Water and Sewer Rate Study.

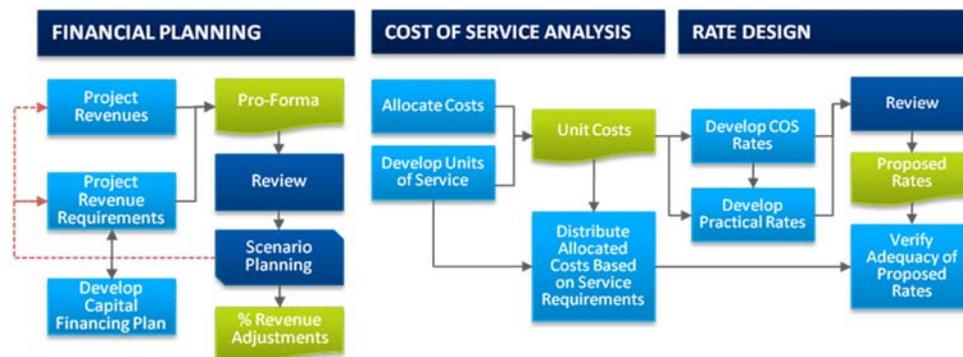


Figure 1 Cost of Service and Rate Studies General Approach

Black & Veatch proposes to update the Water and Sewer Rate Study performed for the City by Black & Veatch in 2016. This update will include a review of the prior recommendations and developing new recommendations based on the City’s actual experience and any changes to objectives. For the purposes of the scope of work presented herein and the analysis to be performed, the Test Year refers to the first fiscal year (2018) of analysis for which the City is requesting these services. The assumed five-year study period as identified herein is FY 2018 through FY 2022.

In addition, the Black & Veatch team will develop a Long Term Financial Plan for the Stormwater System and complete the Developer Participation Rate based on the results of the Water and Sewer Cost of Service Analysis.

The following section provides detailed scopes of work for the Water and Sewer Rate Study, the Stormwater Rate Study, and the Developer Participation Rate Assessment.

Scope of Work

PHASE 1 WATER AND SEWER RATE STUDY

The purpose of the Water and Sewer Rate Study Update is to review and track the City’s current financial performance and design a financial plan that allows the City to meet with future anticipated operating and capital requirements.

Task 1 Project Initiation

A project kick-off meeting will be held to initiate the project. The objectives of this task are to review the project objectives, procedures, and approach. Prior to the meeting, Black & Veatch will review the project scope of work and will provide data requirements and assumptions necessary to initiate and complete the Rate Study Update.

Task 2 Data Collection

Black & Veatch will forward a preliminary data request outlining the financial, operating, customer, and other pertinent data requirements necessary to complete the engagement defined herein. This request will contain similar information as requested during the rate study completed in 2016. As needed, supplemental data requests will be provided to the City as identified by the Black & Veatch project team.

Task 3 Data Review

Upon receipt of data from the previous step, Black & Veatch will perform initial reviews, with the City, regarding the existing operating and capital budgets, and any changes to the financial and strategic policies that the City implemented during the rate study completed in 2016.

Task 4 Revenue and Revenue Requirements

The primary objective of this task is to update and project revenues under existing rates and appropriately forecast the operating and capital requirements over the study period into a five-year cash flow statement. The forecast of revenue requirements establishes the cost basis to compare the adequacy of revenues from existing rates.

4.1 Customer, Usage, and Flow Projections

The Black & Veatch team will work with the City to appropriately update the recent utility customer demand requirements for specific utility services. Attention will be dedicated to understanding customer growth for the water, sewer, and recycled water system. In addition, reason associated with any recent changes in water demand and sewer flow will be reviewed and documented.

The forecast of water demand will be based on factors associated with the City’s anticipated customer growth projections, historical organic customer growth,



Figure 2 Financial Planning

climatological patterns, local economic conditions, and learned customer water usage patterns. Historical number of utility accounts and usage per account will be analyzed to project future billed flow by customer class over the study period.

4.2 Revenue Projections

Black & Veatch will apply the existing water, sewer, and recycled water rates to the forecast of water, sewer, and recycled water customers and flows. Revenue determined as a result of this analysis will form the basis to assess revenues under existing rates by all customer classes and customers served by the City over the study period.

4.3 Miscellaneous Revenue Projections

The revenues to be generated from other existing sources including interest earnings, late payment charges, and other miscellaneous service charges will be projected over the study period. These revenue sources are important to determine the net level of future revenues required from user rates and charges.

4.4 Annual Revenue Requirement Projections

Black & Veatch will update the five-year forecast of annual revenue requirements for the water, sewer, and recycled water operations on a cash basis. We will examine historical financial reports, historical and budgeted operating and capital expenditures, expected operational and staffing changes, potential new facilities, and system growth, other related financial information. In addition, current market cost inflation escalators will be utilized to forecast costs over the study period. Another important piece of developing the annual revenue requirements is gathering an understanding of projected costs associated with Consent Decree mitigation or other regulatory activities that the City is undertaking which can represent significant cost burdens to the sewer utility and customers. Specific consideration will be given to identify one-time and continuing costs incurred by the City related to recent flooding events in the last quarter of 2015.

Black & Veatch will develop revenue requirements for the City's respective utility systems taking into consideration the following factors:

- Budgeted and Projected Operation and Maintenance Expenditures.
- Debt Service Payments on existing and projected bond issues and State Revolving Fund (SRF) loans.
- Cash financing of Capital Improvements Plan (CIP) from rate revenues that are not funded through debt issuance.
- Funding the Sewer Management Program.
- Transfer Payments to City General Fund.
- Contributions to specified reserve funds.

- Any other cash expenditure as appropriate.

As a part of the development of five-year revenue requirements, Black & Veatch will look in detail at the key issues and economic environment that the City has operated under over the past few years. Issues related deferred maintenance, financing of capital, renewal and rehabilitation policies, billing accuracy, recent major flooding, and 2014 Consent Decree and Corrective Action Plan will all need to be considered carefully and planned for in this Water and Sewer Rate Study Update.

4.5 Determination of the Adequacy of Revenues under Existing Rates

The objective of this task is to determine whether the City's existing rates and charges are adequate to meet the revenue requirements and achieve the financial policies established for the water, sewer, and recycled water system.

Black & Veatch will update the five-year cash flow analyses for the water and sewer funds over the study period showing a comparison of revenues under existing rates with revenue requirements. As a part of the cash flow analyses, we will determine the annual revenue increase required to adequately support utility operations.

The cash flow analyses will establish the basis to develop a sound financial plan over the study period and establish the target revenues to be utilized in performing the cost of service analysis and rate design analysis.

4.6 Capital Financing Plan

The water and sewer utility's latest Capital Improvement Program (CIP) will be reviewed to gain an understanding of any substantial changes to the projects scheduled; the timing associated with such projects, anticipated source of financing, and the anticipated timing of proposed revenue bond issues. Black & Veatch will work closely with the City management, utility staff, and third party consultants as needed to provide recommendations on the CIP. Black & Veatch will work with the City to determine the optimal ratio of cash versus debt capital financing as compared to the policy mandates established in the 2016 Rate Study.

Task 5 Cost of Service Allocations

The objective of this task is to update the allocation of the functional components of revenue requirements. The approaches to be utilized by Black & Veatch are based on the **American Water Works Association (AWWA) M1 and M5 Manuals** and the **Water Environment Federation's (WEF) Financing and Charges for Wastewater Systems Manual of Practice No. 27** principles to identify customer class costs of service requirements. The City provides service to customers both inside and outside city limits to customers that provide wholesale utility services to other neighboring utilities. As such, Black & Veatch proposes the use of the utility basis cost allocation method to complete this task. This process involves restating the operating and capital cash

requirements of the Test Year for each of the utilities in terms of operation and maintenance expenses, depreciation expense, and return on rate base.

The subtasks associated with completing the cost of service analysis are detailed in the following sections.

5.1 Functionalization and Allocation of Functional Costs to Cost Components

Black & Veatch will reevaluate appropriateness and update utility functional service parameters on which to allocate cost between retail and wholesale customers, inside-city and outside-city customers, and customers receiving distinct service from the City. This step recognizes that costs incurred by the utilities are typically caused by a service requirement of the system. These requirements vary between water and sewer utilities but generally include; annual consumption/flow, peak demands, number of customers, and other services (fire services for water utilities and extra strength treatment “TSS/BOD or COD” for sewer utilities).

Black & Veatch will update the test year cost of service allocations. The development of water functional cost allocations will recognize base or volume related costs, maximum day and hourly capacity or demand costs, fire protection costs, and customer costs. On the other hand, the sewer functional cost allocations will recognize volume, suspended solids, biochemical oxygen demand, and customers. The recycled water cost allocation will be based on the total amount of recycled water produced. Also, the allocation of revenue requirements will recognize keys issues associated with providing service to wholesale, multi-family, industrial surcharge, and other special service customers.

5.2 Development of Units of Service

Black & Veatch will update our estimates of the units of service associated with each of the cost causative elements for water, sewer, and recycled water service. The units of service will be estimated based on the service characteristics that are defined for each customer class. Specific attention will be dedicated to breaking out special classes of service such as wholesale service, multi-family service and dwelling units, service provided to industrial surcharge customers, and other customers receiving special service designations.

These units of service will be updated recognizing the customer usage analysis, available data, and engineering judgment about customer class service requirements. At the completion of the unit of service analysis update, the Black & Veatch team will align the functional allocation of revenue requirements with the determined units of service.

5.3 Development of Unit Costs of Service

The units cost of service will be the result of aligning the allocation of functional cost with the estimated units of service. The calculated units cost of service establishes the basis to understand the cost based functional unit value of services provided by the City. As determined in the analysis, the unit cost of service will be utilized to determine the cost responsibility of all customers classes summarized in the units of service.

5.4 Distribution of Costs to Customer Classes

Black & Veatch will assign the total costs of service for each customer class by applying unit costs of service to each individual customer classes' units of service. The relative responsibility of each customer class will be specifically determined based on each class' or user's estimated service requirements. A direct assignment and calculation of the utility systems inside and outside the city cost differential will be developed based on the utility's current cost of capital and a reasonable rate of return from customers served by the utility.

Upon completion of this subtask, Black & Veatch will provide a summary of the costs of service by customer class in comparison to the revenue under existing rates for the Test Year to determine the degree of cost recovery and to identify possible revenue adjustments for consideration in rate design to align the customer classes with the cost burden that they place on the utilities. Based on the stated goals and objectives of the cost of service and rate design process, this comparison is important in the determination of appropriate revenue recovery and the mechanisms by which to recover these costs for each utility system.

Task 6 User Rates and Charges Analysis

The objective of this task is to recommend fair and equitable rate structure options for rate design and associated customer classifications for water and sewer service. Figure 3 highlights the process and connection between the cost of service analysis and rate design analysis in verifying the adequacy of the proposed rates. During the cash flow analyses, total system proposed revenue targets are determined and the rate design analysis verifies the ability of proposed rates to achieve these revenue targets. Black & Veatch will also provide updated recommendations on the City's current rate structure as needed.

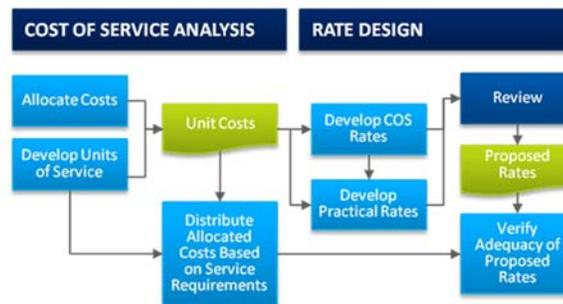


Figure 3 Cost of Service and Rate Design Analysis

Our recommended approach to the rate design process seeks to establish a reasonable nexus between costs incurred in providing service and the rates and charges that are designed to recover these costs of providing service. Black &

Veatch recognizes that there needs to be a balance between the rates as determined by the cost of service analysis and the City's goals and objectives.

Black & Veatch in conjunction with the City will consider City policies, existing tariffs, pricing and project objectives, and practical limitations as a part of the rate design analysis. Issues around customer affordability, revenue stability, and cost of service recovery by class can have conflicting impacts, but will be strongly considered and quantitatively analyzed to determine the impact on the adequacy of the proposed rates.

The understanding of existing customer classes' bill tabulation distributions will be critical to providing revenue stability and recovery to the City. For achieving revenue neutrality in rate design, it is imperative that accurate and appropriate customer billing information is provided. Working closely with the City's customer billing staff and Customer Suite billing system, Black & Veatch envisions this process as an interactive dialogue and exchange that is critical to the Study.

Black & Veatch will utilize the price elasticity findings developed in the cash flow analyses to set and test the adequacy of the proposed rates. This process will allow the City to implement sound and adequate utility service rates considering the impact of price on the quantity of utility services utilized.

Upon updating the rate design analysis, the Black & Veatch team will prepare bill impact comparisons between the existing and proposed utility rates and the utility service rates of neighboring utilities.

Task 7 Reports and Deliverables

Black & Veatch will prepare a draft report and a subsequent final project reports at the conclusion of the engagement which will highlight the work completed in the tasks above and provide recommendations for the following:

- Projected Five-Year Financial Plan and Cash Flow Statements with Proposed Revenue Increases by Utility System.
- Cost of Service Allocations for FY 2018.
- Proposed Water and Sewer Rates for the City for FY 2018.

The respective submittal will explain the study approach, findings, and recommendations. Listed below is a summary of all the reports to be agreed upon and submitted to the City:

1. Draft Rate Study Update Report
2. Completed Final Rate Study Update Report

Task 8 On-Site Meetings

Based on our experience during last year's Rate Study, Black & Veatch proposes to attend seven meetings: 1) Project Orientation, 2) Financial Plan Results, 3) City Council Preliminary Results, 4) Preliminary Rates, 5) City Council Rate Presentation (Proposed Rates), 6) 1st Reading of Proposed Rates, and 7) Final Reading of Proposed Rates. Additional in-person meetings can be held per the City's request at additional cost. Black & Veatch proposes frequent communication throughout the engagement and will set up weekly conference calls throughout the project.

PHASE 2 STORMWATER RATE STUDY

The primary purpose of this phase is to complete a stormwater financial plan and rate study (study) to develop a five-year financial plan (FY 2018 through FY 2022) and cost of service analysis in support of updating the rates to reflect the costs of stormwater services funded via City's stormwater enterprise fund.

The specific tasks and subtasks include:

Task 1 Project Kick-off

1.1 Project Initiation and Data Collection

This task will include a project kick-off meeting to provide an opportunity to review project objectives and confirm scope of work; review project schedule and major milestones; collect pertinent data for the study; detail the related policy issues pertaining to the study, and discuss any relevant study needs. Subtasks include:

- **Preliminary Data Request:** Prepare an initial request for financial and operational data and other pertinent information prior to the first meeting with City staff. Typical data which may be requested for the study includes:
 - Detailed operating and capital budgets pertaining to stormwater services along with actual expenditures for the past five-years.
 - The most recent six to ten year Capital Improvements Program (CIP), debt service schedules, and loan agreements and Bond Anticipation Notes (BAN), if any.
 - Financial audited statements for FY 2015, if available, along with itemized revenues.
 - Summary of existing stormwater customer accounts, associated Equivalent Residential Units (ERUs) and amount billed by customer class (if applicable) for the last five years.
 - Any other agreements pertaining to shared services or contract operations.
- **Supplemental Data Request:** As the study progresses after the initial data collection and review, Black & Veatch may submit requests for additional data and clarifications of initial data received.

Task 2 Stormwater Financial Planning

The objective of this task is to develop a comprehensive Stormwater Utility Financial Plan for the study period of FY 2018 through FY 2022.

This major task requires an assessment of revenues based on the existing rate structure and fee schedules; an estimation of future revenue requirements; an estimate of the City’s ability to meet projected revenue requirements; and a determination of the magnitude of revenue adjustments.

Figure 4 provides a graphical illustration of the project approach for the development of the five-year financial plan.

The subtasks are as follows:

2.1 Bill Tabulation Analysis

To project stormwater service charge revenues based on the existing stormwater rate structure, a bill tabulation analysis will first be performed. This analysis provides a distribution of accounts and ERUs by “Detached single-family dwelling units” and “Other developed lands” as well as historical service charge revenues and future service charge revenues under existing rates.

2.2 Customer Accounts and ERU Projections

Black & Veatch will project stormwater accounts over the planning period. Such projections will be developed by considering a five-year historical growth trends, loss of billable units (ERUs) due to appeals and/or adjustments in the credit program, potential impacts from development, industry experience and judgment.

The five-year historical review of accounts and ERUs by customer class is subject to data availability from the billing system.

The ERU projections will be based on the projected number of stormwater utility accounts and an ERU per account analysis to reflect the effects of increased or decreased billing units by stormwater customer class.

2.3 Stormwater Revenue Projections

On completion of tasks 2.1 and 2.2, Black & Veatch will project stormwater revenues, based on existing FY 2016 rates, for the study period.

2.4 Miscellaneous Revenue Projections

The revenues to be generated from other applicable existing sources including interest earnings, late payment penalties and other miscellaneous revenues will be projected for the planning period. These revenue sources are important for determining the net level of future revenues which need to be generated from stormwater user service charges.



Figure 4 Financial Planning Flow Chart

2.5 Capital Improvement Program and Anticipated Expenditure Requirements

The Stormwater utility's CIP for the period FY 2018 – FY 2022 will be reviewed with the City's project team. The objective of the CIP review is to gain an understanding of the types of projects scheduled; the timing associated with such projects, anticipated source of financing, and determine the appropriate capital program financing mix of bonds, low interest loans, grants and cash financing, as applicable.

2.6 Annual Revenue Requirement Projections

Black & Veatch will develop annual revenue requirements for stormwater operations of the City taking into consideration the following factors:

- Budgeted Operation and Maintenance Expenditures;
- Any other planned expenditures (one-time or reoccurring) as appropriate;
- Increases in level of service related to operation and maintenance activities, and regulatory requirements;
- Planned incentive programs;
- Debt Service on existing bond issues and State Revolving Fund (SRF) loans, if any;
- Transfers, if any, to the General Fund;
- Proposed debt service to support the projected five-year capital program of FY 2018 through FY 2022;
- Debt service coverage, operating reserve and cash financing requirements, as well as emergency fund reserves (if applicable); and
- Application of industry established escalation factors for inflation, insurance, power, etc.

2.7 Determination of the Adequacy of Revenues under Existing Rates

Black & Veatch will develop a cash flow analyses for the stormwater enterprise fund for the five-year study period showing the application of revenue under existing rate levels. On the basis of the cash flow analyses, we will estimate the revenue level adjustments needed to meet projected revenue requirements. The cash flow analysis will take into consideration annual operating reserve requirements, debt service coverage and transfers, if any to the General Fund.

The net revenue requirements for the test year FY 2018 (year for which rates need to be determined) consists of the total fiscal year estimated annual revenue requirements less the use of other miscellaneous revenues estimated for the test year. Black & Veatch will determine a status quo scenario with no revenue adjustments and the proposed level of revenues required to meet revenue requirements over the planning period.

Task 3 Stormwater Cost of Service and Rate Schedule

This task involves the determination of stormwater utility cost of service and the design of stormwater rate schedules. Key subtasks are as follows:

3.1 Cost of Service Assessment

The cost of service to be recovered from stormwater revenues is equal to operation and maintenance expenses, plus all capital related costs, less revenues from other sources. Costs of service will be apportioned among customers based on a customer's existing need for stormwater services. Currently, the City's fee methodology standardizes a customer's stormwater service requirement by determining an ERU measure, which is based on impervious area, for all customers served by the system. As a part of the scope of work defined herein, Black & Veatch will not attempt to adjust the fee methodology, but determine the unit cost to serve the total stormwater system ERUs based on the total cost to operate the stormwater system.

3.2 Design of Stormwater Service Charge Schedules

At the completion of the cost of service assessment, Black & Veatch will review the City's current stormwater rate structure to determine its effectiveness in achieving the appropriate level of stormwater system revenues. We will design a schedule of rates that recover the total revenues needed for the stormwater utility to operate in a solvent manner. In addition, revenues projected to be recovered from the proposed fees in each year of the forecast period will be compared with projected revenue requirements to evaluate the overall revenue adequacy over the forecast period. Typical bills for various customer types will be developed under the existing and proposed rates to identify the impact of the recommended fee structure on each individual customer class.

Task 4 Stormwater Rate Study Report and Presentations

Black & Veatch will assist the City in educating the City administration and the elected officials on the timing and need for potential stormwater revenue adjustments and the financial plan analysis. Specific subtasks are:

4.1 Study Draft and Final Report

Black & Veatch will prepare a letter report that will outline the study approach, provide summary findings of the financial plan for the study period, discuss the stormwater fee rate schedule, and the residential bill impact. Based on the feedback obtained on the draft report, a final letter report will be delivered.

4.2 Project Meetings

Black & Veatch team will facilitate four project meetings. Listed below are the proposed project meetings:

1. Project Kick-Off Meeting;
2. Project Milestone Meetings (Teleconference);

3. Final Results Meeting; and
4. City Council Workshop.

PHASE 3 DEVELOPER PARTICIPATION RATE ASSESSMENT

To complete objectives of the project defined herein, the Black & Veatch team will employ the following Work Plan.

TASK	TASK DESCRIPTION	BENEFITS TO THE CITY
DEVELOPER PARTICIPATION RATE ASSESSMENT		
SCOPE OF WORK BY TASK		
1	Billing Determinant Analysis	Complete a billing determinant analysis to understand the typical average water use amongst customer classes served by the City.
2	Restatement of the Financial Plan and Cost of Service Results for the Test Year 2018	Re-statement of the financial plan and cost of service results that supported the development of the City FY 2018 water and sewer rates.
3	Development of the Participation Rate in Developer-Led water and sewer projects	An update of the previously developed Participation Rate .

The scope of work outlined herein will entail coordination and support from the City staff and other related stakeholders. As a part of the scope of work presented herein, Black & Veatch will initiate and participate in an initial kick-off meeting, facilitate separate meetings related to completing the analysis required herein, and rely upon previous studies and analysis completed by the City.

The order of the presentation as detailed on the following pages parallels the sequence in which the study will be performed.

Task 1 Billing Determinant Analysis

1.1 Project Kick-off and Data Review

This task will involve a project kick-off meeting to define and align the goals and objectives of the study, agree upon the project schedule, establish the project protocol related to the lines of communication, and agree upon project deliverables and milestones.

Prior to attending the kick-off meeting, Black & Veatch will forward an initial data request to the City. The collection and review of the data request information will be discussed. The data request may include reports provided by others, historical and current planning, technical, and financial information, operating and capital budgets, and other applicable reports. All information transferred to Black & Veatch is preferred in an electronic form, where available.

1.2 Perform an Analysis of the City's existing Billing Determinant Information

Black & Veatch will conduct analysis of the City's forecast of customer billing information over the Analysis Period. The task will entail the evaluation of forecasted water usage patterns across the customer classes served by the City along with understanding the forecasted growth in customers. At the completion of this analysis, the Black & Veatch team will understand the typical average water usage and sewer flow by meter size and across the customer classes served by the City.

Task 2 Re-statement of the Financial Plan and Cost of Service Results for FY 2018

Black & Veatch will re-state the Financial Plan and Cost of Service results as determined in the recently completed Water and Sewer Rate Study: Fiscal Year 2018 to appropriately align the development of the Participation Rate with the proposed FY 2018 water and sewer rates. In addition, Black & Veatch will calculate the assignment of operating and capital based on the results of the water and wastewater cost of service results in order to develop developer participation ratios. The developer participation ratios will be applied to the typical annual water and wastewater utility bill to calculate the developer participation rate. At the completion of this phase, Black & Veatch will summarize the FY 2018 assignment of water and sewer cost by units of services which include base and peaking requirements for the water system and flow and loading requirements for the wastewater system.

Task 3 Development of the Participation Rate

Black & Veatch will utilize the results from Phase 1 and 2 respectively to calculate the Participation Rate. As a part of calculating the Participation Rate, Black & Veatch will calculate the typical average water and wastewater annual utility over the Analysis Period, apply the calculated participation ratios, and discounted the respectively annual utility bill over the 10 year Analysis Period in order to calculate the Participation Rate. As a part of developing the Participation Rate, Black & Veatch will work with the City to determine the City's existing cost of debt, the anticipated growth in customer and the changes in existing customer usage patterns over the Analysis Period, and determining the reasonableness of the calculated Participation Rate.

DELIVERABLES

Project Report

Draft Project Letter Report Preparation: A preliminary draft report will be prepared that summarizes the assumptions, findings, and considerations of the entire analysis. The report will include and outline all the assumptions utilized and relied upon, the methodology utilized to perform the analysis, and the general results. Upon completing the draft report, Black & Veatch will deliver

the report to the appropriate City representative for review. The City staff will review the Report and direct Black & Veatch, as necessary, to make edits to the Report.

Final Project Letter Report Preparation: After receiving comments and feedback from the City staff, the comments and feedback will be incorporated and the draft letter report finalized.

Project Meetings and Presentations

The following two meetings and presentations will be attended by a Black & Veatch representative during the course of the engagement detailed herein:

NO.	MEETING DESCRIPTION
1	Project Kick-Off Meeting; and
2	Project Results Meeting

Schedule

Provided below is a summary, by project, of the estimated time to complete the scope of works detailed herein. The following schedules are based on the City’s issuance of a timely notice to proceed and the transfer of all requested project data. Specific on-site meeting dates are estimates only and will be mutually agreed upon. The completion and timing of delivery for the reports will also be mutually agreed upon at the outset of the projects during the Project Kick-Off Meetings.

TASK DESCRIPTION	2016			2017					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Phase 1: Water and Sewer Rate Study									
Seven Project Meetings			○	○	○	○	○	○	○
Phase 2: Stormwater Rate Study									
Four Project Meetings		○	○	○	○				
Phase 3: Developer Participation Rate									
Two Project Meetings						○	○	○	
Project Reports									
Completion of Project Prosecution									

Key:

- Project Prosecution
- Meetings & Presentations
- Project Reports
- Completion of Project Prosecution

Fee

For the requested services and level of effort as understood and outlined herein, Black & Veatch proposes to perform the services for a fixed fee amount of **\$198,500** inclusive of direct expenses incurred at actual cost. Direct expenses include airfare, car rental, mileage, parking, hotels, meals, and outside reproduction costs. These direct expenses include estimated travel expenses and other per diem expenses for the scheduled meetings and presentations to be attended by Black & Veatch consultants.

Provided below is a summary of the fixed fee by project.

PHASE	PROJECT	LABOR COST	EXPENSES	TOTAL COST
1	Water and Sewer Rate Study	\$95,500	\$10,500	\$106,000
2	Stormwater Rate Study	\$50,900	\$4,400	\$55,300
3	Developer Participation Rate	\$34,100	\$3,100	\$37,200
	Total Project Cost	\$180,500	\$18,000	\$198,500

Black & Veatch proposes to submit monthly invoices to the City at the end of each month due upon receipt during the project to bill on a percent complete basis. Black & Veatch expects all payments to be due within 30 days (Net 30) upon receipt of an invoice.

Disclaimer

It is understood that, upon notification of your award of the project to Black & Veatch, both parties agree to use reasonable diligence, to negotiate a mutually acceptable definitive written contract with respect to the work described in this proposal. Based on our experience we are reasonably confident that the contract terms can be negotiated quickly and without any effect on the project schedule. However, until we receive a fully executed, mutually acceptable definitive written contract, Black & Veatch will not perform any work on behalf of the City related to the scope of work proposed herein.

Agreement for Professional Services
Water and Sewer Rate Study Update
Project Funding: 5511706-WM4358/SS7349/SD8442-638305

Black & Veatch Corporation and City of Columbia, SC

Contract Amendment # 3

October 12, 2016

Description of Change: Request to modify the original Professional Services agreement between the City of Columbia (City) and Black & Veatch Corporation (Engineer) dated December 2, 2014 (Agreement) and subsequently amended by Contract Amendment #1 dated September 15, 2015 and Contract Amendment #2 dated January 11, 2016. This request, Contract Amendment #3, further amends the original agreement to exercise renewal options and to provide for related services as outlined below:

- 1- In accordance with the original Agreement for the Water and Sewer Rate Study, the City desires to exercise the first of two annual renewal terms for the period December 2, 2016 through December 1, 2017.
- 2- The Engineer shall update the Water and Sewer Rate Study (Phase 1) in accordance with the scope of services as defined in Exhibit A, attached hereto. The term for this work is anticipated to begin January 1, 2017.
- 3- The City desires to obtain select services as proposed by the Engineer to provide an additional Rate Study to address the City's Stormwater needs (Phase 2), except as otherwise noted in Item #4 below. The initial term for this additional work shall commence on November 1, 2016 through December 1, 2017 with an option to extend for one additional annual term, not to exceed December 1, 2018.
- 4- The City declines the services as proposed by the Engineer for Phase 3, Developer Participation Rate Services as identified in Exhibit A, attached hereto.

All other provisions of the Agreement, except as herein modified or changed, remain in full force and effect.

Proposed Change and Basis for Payment:

Original Contract Price:	\$ 199,158.00
Previous Change Orders:	\$ 135,017.00
This Change (addition):	\$ 161,300.00
Revised Contract Price:	\$ 495,475.00

Additional funds are to be provided in the following manner:

Funding has not been set up for this Amendment; however, it is anticipated to be funded as follows:

\$53,000.00 to come from WM4149 and transferred to 5511706-WM4358-638305

\$53,000.00 to come from SS7286 and transferred to 5511706-SS7349-638305

\$55,300.00 to come from SD8398 and transferred to 5511706-SD8442-638305

This Change is Acceptable:

By: _____ Black & Veatch Corporation
Print Name: _____ Title: _____

Recommended for Approval: _____ Purchasing Agent

Recommended for Approval: _____ Director of Utilities and Engineering

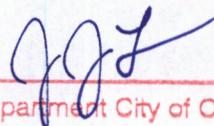
Recommended for Approval _____ Assistant City Manager for Operations

Approval of Change: _____ City Manager

Date of Approval: _____

APPROVED AS TO FORM

DATE



Legal Department City of Columbia, SC