



COLUMBIA CITY COUNCIL MEETING AGENDA TUESDAY, JUNE 11, 2019

The Columbia City Council will conduct a Council Meeting at 6:00 p.m. on Tuesday, June 11, 2019 at Council Chambers at City Hall, 1737 Main Street, 3rd Floor, Columbia, SC 29201.

The Honorable Mayor Stephen K. Benjamin
The Honorable Sam Davis, District I ▪ The Honorable Tameika Isaac Devine, At-Large
The Honorable Moe Baddourah, District III ▪ The Honorable Howard E. Duvall, Jr., At-Large
The Honorable Edward H. McDowell, Jr., District II ▪ The Honorable Daniel J. Rickenmann, District IV

Prior to entering the meeting please turn all electronic communication devices to the silent, vibrate or off position. All presenters are asked to speak directly into the microphone for recording purposes.

CALL TO ORDER

PLEDGE OF ALLEGIANCE

INVOCATION

ADOPTION OF THE AGENDA

PUBLIC INPUT RELATED TO AGENDA ITEMS

CONSENT AGENDA ITEMS 1 THROUGH 5

1. Council is asked to approve a Contract for the City of Columbia's Self-Insured Workers' Compensation Program, as requested by the Human Resources Department. Award to Planned Administrators, Inc. as the Third Party Administrator in the amount of \$231,840.00. This firm is located in Columbia, SC.

Funding Source: Workers' Comp Administration 6098939-636200 Insurance and Bonding

2. Council is asked to approve a Service Agreement for the Administration of a South Carolina Tort Liability Self-Insurance Program, as requested by the Human Resources Department. Award to Planned Administrators, Inc. as the Third Party Administrator in the amount of \$370,190.00. This firm is located in Columbia, SC.

Funding Source: Claims-Automobile 6088938-645100, Claims-General Tort 6038932-645100, and Claims-Sewer 6068936-645100



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3. Council is asked to approve an Engineering Services Agreement for Project SS7474; North Richland Crane Creek and Upper North Branch Sewer Improvements Phase I, as requested by Columbia Water. Award to Michael Baker International in the amount of \$450,505.00. This firm is located in Columbia, SC.

Funding Source: 5529999-SS74701-658650 - The original budget amount is \$450,505.00.

This is a Clean Water 2020 Program Project and Mentor Protégé Program Project. Michael Baker International of Columbia, SC is the Mentor and will provide project management at 68.2% (\$307,120.00) of the total contract value. Case Consulting, a Minority Business Enterprise of West Columbia, SC is the Protégé and will provide project controls, meetings, scheduling, SharePoint reporting, and surveying at 15.1% (68,200.00) of the contract value. MBI will meet the 20% MPP requirement once the construction administrative service phase is authorized by the City.

The following sub-consultants will provide additional services:

F&ME Consultants, Inc. of Columbia, SC will provide evaluation and design phase project administration and surveying services at 11.8% (\$53,185) of the contract value.

Steadman & Associates of Columbia, SC will provide geotechnical services at 4.9% (\$22,000) of the contract value.

4. Council is asked to approve Construction Change Order# 1 for Project SS7363; Smith Branch 03 Sewer Rehabilitation Implementation, as requested by Columbia Water. Award to North American Pipeline Management, Inc. in the amount of \$1,620,988.00. This firm is located in Marietta, GA.

Funding Source: 5529999-SS736301-658650. The previous awarded amount, including a \$250,000.00 contingency is \$6,205,713.00. With approval of this Construction Change Order increase of \$1,620,988.00, the revised awarded contract amount will be \$7,826,701.00. The original budgeted amount for this project is \$7,000,000. The original budget amount for this change order is \$1,620,988.00.

This is a Clean Water 2020 Program Project.

The original contract has subcontractor LA Barrier and Son of Lexington, SC, a Minority Business Enterprise (Woman) providing trucking and aggregate materials at 12% (\$692,000) of the contract value. The CDBE goal for this project was established at 26%. The vendor has maintained the goal at 12.7% with good faith efforts for this change order.



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5. Ordinance No.: 2019-044 Granting an encroachment to The Grand for installation and maintenance of twelve (12) tables with umbrellas and forty-eight (48) chairs within the tree zone and sidewalk right of way areas of the 1600 block of Main Street adjacent to 1621 Main Street for use by its patrons for outdoor dining during normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00 a.m. on Sunday

First reading approval was given on June 4, 2019.

BUDGET PUBLIC HEARING & ORDINANCES FIRST READING

6. Ordinance No.: 2019-038 To Raise Revenue and Adopt the Budget for the City of Columbia, South Carolina, for the Fiscal Year ending June 30, 2020
7. Ordinance No.: 2019-039 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-143 Water service rates and Sec. 23-149 Sewer service rates (a) and (b)

PUBLIC HEARING & ORDINANCES FIRST READING

8. Ordinance No.: 2019-040 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-150 Discharge of septic tank waste and repealing Sec. 23-151 Use of septic tanks where public sewer is available
9. Ordinance No.: 2019-041 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates to add Sec. 23-155 Industrial user permit fees
10. Ordinance No.: 2019-042 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article IV, Wastewater Service, Sec. 23-112 Violations; penalty



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ORDINANCE - SECOND READING

11. Ordinance No.: 2019-033 Authorizing the City Manager to execute a Twelfth Amendment to Purchase Agreement between the City of Columbia and Bright-Meyers 2001 LLC for the sale of 5.97 +/-acres (Capital City Stadium), Richland County TMS #11204-02-02

First reading approval was given on May 7, 2019.

CITY COUNCIL DISCUSSION

12. The COMET's Fiscal Year 2019/2020 Budget Presentation - Mr. John C. Andoh, Executive Director/CEO for The COMET

APPEARANCE OF THE PUBLIC

ADJOURNMENT



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Human Resources

FROM: Pam Benjamin,

SUBJECT: Council is asked to approve a Contract for the City of Columbia's Self-Insured Workers' Compensation Program, as requested by the Human Resources Department. Award to Planned Administrators, Inc. as the Third Party Administrator in the amount of \$231,840.00. This firm is located in Columbia, SC.

FUNDING SOURCE & ORIGINAL BUDGET: Funding Source: Workers' Comp Administration 6098939-636200 Insurance and Bonding

ATTACHMENTS:

- **#a:** PAI WC Contract FY 19-20 (PDF)

STATE OF SOUTH CAROLINA)
)
 COUNTY OF RICHLAND)

CONTRACT

This contract ("Contract") is made effective as of the 1st day of July, 2019 ("Effective Date") by and between the City of Columbia, (hereinafter "City") and Planned Administrators, Inc. (hereinafter "PAI").

For and in consideration of the mutual promises and undertakings hereinafter described, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

A. PERFORMANCE STANDARDS

PAI will, during the term of this contract, professionally administer and adjust claims arising under the City's self-insured workers' compensation program by qualified administrators and adjusters.

PAI will, during the term of this contract, ensure that the City's workers' compensation program fully complies with the South Carolina Workers' Compensation Act and all rules, regulations and policies of the South Carolina Workers' Compensation Commission.

B. SCOPE OF SERVICES FOR THIRD PARTY ADMINISTRATION OF WORKERS' COMPENSATION

PAI will provide the following services (the "Services"), which include, but are not limited to the following:

1. Act as an advisor and representative of the City in all matters pertaining to any and all obligations required at the City by the South Carolina Workers' Compensation Act and Regulations;
2. Compile and file notices, reports and any forms required of the City by the South Carolina Workers' Compensation Act and Regulations;
3. Conduct investigations to determine the validity and compensability of any accidents or injuries claimed by City employees to be a workers' compensation claim and to accept or deny such claims on behalf of the City;
4. Determine all benefits due to City employees on all compensable cases and to make payment of all benefits due through use of City funds in such a manner to be directed by the City;
5. Unless otherwise directed by the City, to direct choice of medical care for all City employees entitled to receive medical care under the South Carolina Workers' Compensation Act and Regulations and to make payment therefore using fee schedules as established by the South Carolina Workers' Compensation Commission if possible or necessary, through use of City funds in such a manner to be directed by the City;
6. Utilize external bill review services for the review of charges for medical services, if

deemed prudent;

7. Maintain any records necessary for the City to fulfill its obligations under the South Carolina Workers' Compensation Act and Regulations;
8. Negotiate and/or compromise workers' compensation claims submitted or filed by City employees, including attending informal conferences;
9. Furnish and provide the City with monthly reports of all claims detailing the following:
 - a. Claims received;
 - b. Claims pending;
 - c. All payments made on behalf of the City;
 - d. Estimates for all reserves for actual, anticipated or potential benefits or expenses; and,
 - e. All other pertinent data regarding claims and claim payments.
10. Assist in the completion of the self-insurance tax return and Second Injury Fund assessment form and assist in the compilation of all information necessary to calculate premiums for excess insurance coverage. Obtain quotes for excess insurance coverage. The City has the responsibility for payment of self-insurance taxes, Second Injury Fund assessment and excess insurance premiums and for filing of all forms.
11. Provide all required reporting of settlements, judgments or awards, where medical expenses are paid to a Medicare-eligible claimant to the Centers for Medicare and Medicaid Services (CMS) in compliance with the Medicare Secondary-Payer Mandatory-Reporting Requirements.
12. Provide toll-free telephone access for City employees to report claims or otherwise contact PAI's personnel;
13. Assign a primary adjuster with a minimum of five years workers' compensation experience to oversee the City's claims and provide a direct contact for the City's Management and Legal Department by establishing a dedicated telephone line to the primary adjuster;
14. Protect and/or pursue the City's rights to subrogation in third party and Second Injury Fund reimbursements. PAI acknowledges and agrees that current contracts with Reimbursement Consultants, Inc. (RCI) will remain in place and PAI will not be entitled to collect any incentives on any RCI contract.
15. Comply with the City's Workers' Compensation Claims Guidelines.
16. In accordance with the Joint Offering Agreement between PAI and Bardavon Heath Innovations ("Bardavon") dated _____, provide the following services:
 - a. Management of the Physical Therapy/Occupational Therapy provider network.
 - b. Group-specific data analytics, to include:
 - i. Case-specific quality metrics,

- ii. Provider network performance metrics (for the Blue Cross and Blue Shield of South Carolina PPO network, PAI-owned PPO network(s) and/or any network managed by Bardavon Health Innovations, LLC), and
 - iii. South Carolina Workers Compensation Self-Insurance Program performance metrics.
- 17. Provide the following Preventive Job Management services:
 - a. Complete a job analysis on the four (4) City jobs with the highest injury rates (analysis will be performed one-time only during the term of the Contract). The job analysis will include a risk hazard analysis for the four (4) jobs;
 - b. Develop post-offer, pre-employment testing/screening for the four (4) City jobs with the highest injury rates; and
 - c. Assist the City Manager/HR Director with a return-to-work program.

C. COMMENCEMENT OF SERVICES

PAI shall commence providing the Services on the Effective Date, which shall be inclusive of all of the City's workers' compensation claims in progress.

D. TERM OF CONTRACT

The initial term of this Agreement will be for one (1) year and this Agreement shall commence on July 1, 2019 at 12:00 AM Eastern Standard Time and terminate on June 30, 2020 at 11:59 PM Eastern Standard Time, unless this Agreement is extended or renewed before June 30, 2020 by written consent of both parties. The City shall, in its sole discretion, shall have the option to negotiate a one-time renewal of this contract for an additional one-year term, which would begin on July 1, 2020 at 12:00 AM Eastern Standard Time, at the agreed upon increase of 3% of the service fee. Notice of such renewal must be provided to PAI on or before June 30, 2020.

E. CONTRACT AMOUNT AND TERMS OF PAYMENT

PAI shall be paid the following amounts for providing the requested services:

1. The City will pay PAI a Bundled Administrative Fee of \$8.40 per employee per month for Services. The Bundled Administrative Fee includes:
 - a. Access to the Blue Cross and Blue Shield of South Carolina PPO network(s), PAI-owned PPO network(s) and any network(s) managed by Bardavon Health Innovations, LLC;
 - b. Network management services;
 - c. Re-pricing services;
 - d. Utilization review services (i.e., determinations regarding medical necessity and appropriateness (both as to service and location)),
 - e. Bill review services;
 - f. Medical management services;
 - g. Fraud investigation services; and
 - h. Monthly claims analytics reporting.
2. (a) There will be no additional charges for any medical bills submitted to Blue Cross Blue Shield of South Carolina PPO network(s), PAI-owned PPO network(s) and/or any network(s) managed by Bardavon Health Innovations, LLC.

(b) For any medical bills that may be submitted to PPO networks other than those specified in item 2 (a), the City shall pay PAI the contracted rate that PAI has with such third party network, which will be charged back against the individual claimant or claim file as an Allocated Loss Adjustment Expense ("ALAE").

3. The City acknowledges and agrees that the PPO hospital reimbursement schedules are established using prospective negotiated arrangements that include, but are not limited to, per diem, Diagnosis Related Group ("DRG"), Ambulatory Payment Classification ("APC") or a discount off medical charges, and professional reimbursement is based on fee schedules.
4. The City approves and directs PAI to use its best efforts to secure and negotiate any and all medical bill discounts for any medical bills submitted under this Agreement.
5. PAI will provide the City with a monthly invoice for each payment due. The City will pay each invoice by depositing funds in a bank account or accounts established by PAI no later than 15 days after receipt of an invoice from PAI. The City shall arrange for PAI to write checks on the account or accounts for use in the payment of the City's qualified claims, losses and allocated loss adjustment expenses (ALAE). Such funds shall be provided at the inception of this Agreement in the amount of Fifty Thousand and 00/100 (\$50,000.00) Dollars and replenished promptly from time to time thereafter as needed upon notice by PAI to City.
6. PAI shall have the right to annually negotiate the Service Fee if, during the prior contract year, Client's pending caseload exceeds historical claim numbers by more than ten percent (10%). Such Service Fee negotiation shall occur at least thirty (30) days prior to the renewal date. PAI shall furnish the computation methodology and justification applicable to any such fee adjustment.
7. Client and PAI may re-negotiate in good faith the fees for any year in which the workers compensation requirements of the federal or state government substantially change or additional service are required.

F. **INCENTIVES**

The City also agrees to the following Incentive Fee Schedule:

1. **SC Second Injury Fund Recoveries:** The City agrees to pay PAI ten (10%) percent of all recoveries from the South Carolina Second Injury Fund by PAI.
2. **Subrogation Recoveries:** The City agrees to pay PAI ten (10%) percent of all recoveries from third parties. PAI acknowledges and agrees that current contracts with Reimbursement Consultants, Inc. (RCI) will remain in place and PAI will not be entitled to collect any incentives on recoveries made by RCI nor on subrogation recoveries obtained by the employee's counsel.
3. **Payment of Incentive Fees:** Payment of the above savings or recoveries will be made by the City on a quarterly basis based on an invoice provided by PAI, and supported by appropriate detail.
4. **Costs of Recoveries:** PAI shall be responsible for all costs of South Carolina Second Injury Fund or subrogation recovery, including but not limited to, filing

fees, attorney's fees, expert witness fees, deposition costs, which are listed by way of illustration and not limitation. These costs shall be paid by PAI from its ten (10%) percent incentive. PAI shall not be entitled to payment of the incentive on subrogation recoveries obtained by the employee's counsel.

5. **Pass-through Costs:** Index fees are fees charged for researching claims through an Insurance Services Office (ISO) national database to determine if other claims that may have been made by the claimant and may indicate potential fraudulent claims. These fees will be charged at the prevailing rate by ISO (approximately \$11.00 - \$12.00 per claim).

CMS reporting fees are charged by CMS for submitting claims. These fees will be charged at the prevailing rate by CMS (approximately \$7.30 per claim).

G. NURSE CASE MANAGEMENT

Upon request, PAI can provide Nurse Case Management with vendors of City's choice. The City agrees to pay all costs associated with their selected vendor for rehabilitation nurses as Nurse Case Managers. Travel expenses for mileage, meals and any required overnight lodging would be additional and will be paid consistent with the City's policies. Use of a Nurse Case Manager's services for a specific case shall be subject to the mutual agreement of the Client and PAI; upon such mutual agreement, PAI will use the Nurse Case Manager as directed by the City.

I. PERSONNEL

PAI will provide a sufficient number of qualified personnel who meet relevant State of South Carolina requirements and certifications regarding administration/adjustment of a self-insured workers' compensation program and/or loss control program. PAI shall have an office with local service representatives located within 20 miles of the corporate limits of the City of Columbia. The local representatives will be employed by PAI on a full time basis and not as subcontractors.

J. NON-DISCRIMINATION

To the extent legally feasible, PAI will take affirmative action in complying with all Federal, State and local requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap.

K. REPORTS

PAI shall provide the City with reports regarding the administration/adjustment of its self-insured workers' compensation program or loss control as specified in the Section B (Scope of Services) at no additional cost.

L. RESERVATION OF RIGHT TO PROVIDE LEGAL SERVICES

The City will provide in-house legal services for the litigation of workers' compensation claims to include, but not be limited to, denied or contested employee workers' compensation claims with the exception of third party subrogation and Second Injury Fund

recoveries. For these recoveries, PAI shall provide legal counsel with the City's approval. PAI shall provide the City prompt and timely notice of matters that are to be litigated by City legal staff. The City will also prepare clincher agreements for all clinchered workers' compensation cases. PAI's personnel shall fully cooperate with the City's legal counsel with regard to any litigated matters.

M. LICENSES, PERMITS, AND TAXES

All costs for required permits, licenses and taxes applicable to and/or necessary for PAI's performance of its obligations hereunder shall be borne by PAI. PAI will procure a City of Columbia business license. City shall be responsible for payment of self-insurance taxes, Second Injury Fund assessments and premiums for excess insurance coverage.

N. DUTY OF CONFIDENTIALITY

PAI and PAI's employees, shall keep all information received and utilized by it in the performance of the Services confidential. Such information may be released only upon written approval by the City.

O. CONTRACTOR SOLELY RESPONSIBLE FOR PERFORMANCE

PAI shall be responsible for performance of the Services. PAI is an independent contractor and does not act as the City's agent or employee.

P. ASSIGNMENT AND SUBLETTING

In fulfilling its obligations under this Agreement, PAI reserves the right to contract with third parties it deems necessary to perform its obligations under this Contract; therefore, the City acknowledges and agrees that there is no obligation for PAI to obtain prior approval from the City as a condition precedent to entering into any such contract. PAI shall remain liable for the performance of any and all such subcontracted duties.

Q. OWNERSHIP OF DATA

All data or other information generated by or used by PAI, in any form whatsoever, is the property of the City and shall not be used by PAI for any purpose whatsoever except to perform the Services. Notwithstanding the preceding, PAI may use the City's data for PAI's internal purposes (such analysis, aggregation and summary purposes) provided that such data is de-identified and the confidentiality of such data is maintain by PAI.

R. DUTIES UPON TERMINATION

Third Party Administration and claims adjusting services will end at the termination of the contract term, except PAI will provide services at the current Buddled Adminsitative Fee rate to ensure an effective transition to its successor who shall be responsible for the conclusion of any and all workers' compensation claims in progress. At termination, PAI shall immediately provide the City, or its designee, with all records and data in any format PAI is capable of producing and at no cost to the City, which were generated, created or received by PAI in performance of the contract by PAI. All records shall be free from licenses or any proprietary claims or interest.

S. TERMINATION

This contract may be terminated by the City at any time upon any of the following grounds:

1. Failure by the City of Columbia to appropriate funds for the administration of the City's self-insured workers' compensation program;
2. PAI fails to perform any of the Services and does not correct such deficiency within 15 days after having been notified by the City of such deficiency;
3. Upon 30-days written notice by the City of its intent to no longer be self-insured under the workers' compensation law. If after providing such 30 day notice, additional time is required to facilitate the transition away from a self-insured program, the City will pay PAI for such additional days on a per diem basis, based on the contract fee;
4. Upon expiration of the initial two-year term of the contract with no renewal option exercised; and,
5. By mutual agreement.

T. WHOLE AGREEMENT

This Contract contains the entire agreement between the City and PAI. In order to be binding, any modification hereof shall be in writing and signed by the City and PAI.

U. CONTRACT INTERPRETATION

In the event that there are any disagreements between the City and PAI with regard to any of the requirements, specifications or interpretations of this contract, PAI 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 the contract, if any, shall not be construed against the City.

V. STATE LAW APPLICABLE

The contract shall be construed in accordance with the laws of the State of South Carolina. PAI 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 the contract and the performance thereof.

W. NOTICE

Written notice to the City shall be made by placing such notice in the United States Mail, certified, postage prepaid and addressed to: City Manager, Post Office Box 147, Columbia, South Carolina 29217. A copy of any written notice shall also be mailed to Risk Management, Post Office Box 147, Columbia, South Carolina 29217.

Written notice to PAI shall be made by placing such notice in the United States Mail, certified, postage prepaid and addressed to PAI Third Party Administrators, Attn: Tosca

Walls, Director, TPA Operations, Post Office Box 100159, Columbia, South Carolina 29202.

Notice shall be deemed given as of the date on the delivery confirmation receipt.

X. BREACH/WAIVER

The failure of either PAI or the City to insist upon the strict performance of any provision of this contract 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 Contract at any time. Waiver of any breach of the Contract by PAI or City shall not constitute waiver of a subsequent breach.

Y. SEVERABILITY

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

Z. SUCCESSORSHIP

The contract is binding upon PAI, its successors and assigns. This Contract is binding upon the City in accordance with its terms and conditions.

IN WITNESS HEREOF, the parties hereto have executed this contract the day and year first above written.

CITY OF COLUMBIA

By: Teresa B. Wilson
Its: City Manager

PLANNED ADMINISTRATORS, INC.

By: George Stiles
Its: VP, Operations

APPROVED AS TO FORM

Legal Department City of Columbia, SC



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Human Resources

FROM: Pam Benjamin,

SUBJECT: Council is asked to approve a Service Agreement for the Administration of a South Carolina Tort Liability Self-Insurance Program, as requested by the Human Resources Department. Award to Planned Administrators, Inc. as the Third Party Administrator in the amount of \$370,190.00. This firm is located in Columbia, SC.

FUNDING SOURCE & ORIGINAL BUDGET: Funding Source: Claims-Automobile 6088938-645100, Claims-General Tort 6038932-645100, and Claims-Sewer 6068936-645100

ATTACHMENTS:

- **#a:** PAI Tort FY 19-20 (PDF)

**PAI Third Party Administrators
Service Agreement for Administration of a
South Carolina Tort Liability Self-Insurance Program**

Article I: Parties to the Agreement

This Service Agreement ("Agreement") is made effective this 1st day of July, 2019, between Planned Administrators, Inc. (hereinafter referred to as "PAI") and City of Columbia (South Carolina) (hereinafter referred to as the "City").

Article II: Background

The City warrants to PAI that it is a self-funded municipality under the South Carolina Tort Claims Act, and that it self-insures against all exposure for Tort Liability. The City desires to have PAI provide third party claims management services in connection with this self-insured program. PAI will provide such services on the terms and conditions hereinafter stated and does hereby warrant that it can provide all the services set out in this Agreement. PAI warrants it is duly authorized by all applicable state and federal regulatory authorities to perform the services set out herein, or it will contract with appropriately licensed representatives for those services or jurisdictions where PAI is not licensed or approved to provide such services.

Article III: Term of Agreement

1. Initial Term of Agreement: The initial term of this Agreement will be for one (1) year and this Agreement shall commence on July 1, 2019 at 12:00 AM Eastern Standard Time and terminate on June 30, 2020 at 11:59 PM Eastern Standard Time, unless this Agreement is extended or renewed before June 30, 2020 by written agreement executed by both parties. The City shall, in its sole discretion, have the option to negotiate a one-time renewal of this Agreement for an additional one-year term, which would begin on July 1, 2020 at 12:00 AM Eastern Standard Time, at the agreed upon 3% rate increase for the service fees provided for herein.

2. Termination of Agreement: This Agreement may be terminated during its term by either party for any reason, at any time, provided that a written notice of such cancellation is received by the other party not later than ninety (90) days prior to the cancellation of this Agreement. In the event of a material breach of this Agreement by either party, including the City's failure to pay the fees provided for herein, this Agreement may be terminated upon ten (10) days written notice by the non-breaching party so long as the breaching party does not cure the material breach during the notice period.

3. Discontinuance of Operations: Should the City file for or is placed into bankruptcy or discontinue its business operation for any reason, all of the fees provided for herein shall become immediately due to PAI and shall be paid immediately. Upon the discontinuation of business operation, this Contract shall immediately terminate without notice, and PAI shall have no further obligation to continue to provide the services called for in this Agreement, and this Agreement shall be considered terminated as of the date

the City ceases operations or files for bankruptcy.

4. Post-Termination: Upon termination of this contract:

(a) PAI will process to conclusion those qualified claims or losses remaining open at the termination of this Agreement for which it has been paid in full at the time of the termination. PAI, through its agents, employees or attorneys, shall continue to be entitled to inspect all necessary files and records and make copies or extracts from those files and records.

(b) PAI and the City shall cooperate with one another and devise the manner, means and format to promptly provide the City possession of the files that the City requests in writing be returned to it. The City shall be provided access to the files and records that PAI has maintained for qualified claims or losses (but the City shall not be entitled to any computer hardware, firmware, software, or other information proprietary to PAI). City is entitled to obtain copies of any and all non-claims related files (general administrative, marketing, risk management, etc.) pertaining to the City and maintained by PAI. PAI shall safeguard all files and records in its possession until such time as those records are transferred to the City or until two (2) years after the termination of this Contract, whichever occurs first.

Article IV: General Conditions of Agreement

1. Full and complete understanding of Agreement: This Agreement represents the full and final understanding of the parties with respect to the subject matter described herein and supersedes any and all prior agreements or understandings, written or oral, express or implied. The parties agree to undertake this Agreement in good faith.

2. Headings: Headings herein are for convenience of reference only and shall not be considered in any interpretation of this Agreement.

3. Amendment of Agreement: This Agreement may only be amended, modified or changed by a written statement signed by both parties to this Agreement.

4. Sole benefit: This Agreement is for the sole benefit of the parties hereto, and in no event shall this Agreement be construed to be for the benefit of any third party, nor shall either party be liable for any loss, liability, damages or expenses to any person not a party to this Agreement, including but not limited to the employees of the City.

5. Partnership/Joint Venture – Not intended or created: Nothing in this Agreement is intended, nor shall it be deemed to constitute a partnership or joint venture between the parties.

6. Performance: PAI shall be fully responsible for exercising reasonable care at all times in the performance of its obligations hereunder.

7. Errors and Omissions Liability Insurance: PAI agrees that throughout the duration of this Agreement, it will maintain a policy of insurance which would indemnify City for any liability for damages up to Two Million Dollars (\$2,000,000.00) Dollars that may arise out of PAI's errors or omissions in performing its obligations under this Agreement.

8. Assignment and Subcontract: This Agreement is not assignable by PAI. Additionally, PAI will not subcontract for any services provided for under this Agreement without prior consent of the City.

9. Successors in Interest: This Agreement shall be binding upon and inure to the benefit of the successors in interest and permitted assigns of the parties hereto.

10. Severability: The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions hereof, and this Agreement shall be construed in all respects as if the invalid or unenforceable provision had been stricken or revised to the minimum extent necessary to make it valid and fully enforceable under applicable law.

11. Waiver: The failure of any party to enforce any provisions of this Agreement shall not constitute a waiver by such party of any provision. A past waiver of a provision by either party shall not constitute a course of conduct of a waiver in the future with respect to that same provision.

12. Confidential Information: "Confidential Information" shall include all information relating to claim information and loss history relating to the City's employees or claimants. PAI may only utilize the confidential information for the purpose of performing its obligations under this Agreement. Notwithstanding the preceding, PAI may use the City's Confidential Information for PAI's internal purposes (such analysis, aggregation and summary purposes) provided that such data is de-identified and the confidentiality of such Confidential Information is maintain by PAI.

13. Limitations of Parties' Liability: By entering into this Agreement, it is hereby expressly agreed by the parties to this Agreement that: PAI does not assume any liabilities to any person or entity or make any warranty (express or implied), except those expressly set forth in this Agreement.

14. Timing of Services: PAI may exercise its own judgment, within the parameters set forth herein, as to the time and manner in which it performs the services required hereunder.

15. Practice of Law: It is understood that PAI will not perform and the City will not request performance of any services which may constitute the practice of law.

16. Applicable Law: The terms and conditions of this Agreement shall be

governed by the laws of the State of South Carolina, both as to interpretation and performance. PAI agrees to subject itself to the jurisdiction and venue of the Circuit Courts of Richland County, South Carolina as to all matters and disputes arising or to arise under this Agreement and the interpretation and performance thereof.

17. Notices: Any notice required to be given under this Agreement shall be sent by certified or registered mail postage prepaid to:

In the case of PAI:
George Stiles, VP of Operations
(or his successor)
Planned Administrators, Inc.
P.O. Box 100159
Columbia, South Carolina 29202

In the case of the City:
Demetrius Rumph
Director of Risk Management
(or his successor)
City of Columbia
P.O. Box 147
Columbia, South Carolina 29217

Article V: Duties and Obligations of PAI

In consideration of the service fees outlined in Article VIII of this Agreement, PAI agrees to provide the following services:

1. To provide all appropriate claims forms believed by PAI to be beneficial for the efficient operation of the City's self-insured program. All forms shall be approved by the City's legal counsel prior to use by PAI.
2. To review all qualified claim, incident, or loss reports against the City. Unless otherwise directed, to determine liability of the City under state or federal law.
3. To conduct an investigation of each reported qualified claim or loss (as defined above in subparagraph 2) to the extent deemed necessary by PAI in the performance of its obligations hereunder.
4. With the consent of the City, to arrange for independent investigators, medical or other experts to the extent deemed necessary by PAI in connection with processing any qualified claim or loss, with the cost to be borne by the City.
5. To perform reasonable and/or necessary administrative and clerical work in connection with qualified claims or losses, including the preparation of checks or drafts drawn on the account or accounts established pursuant to Article VI below.
6. Provide all required reporting of settlements, judgments or awards, where medical expenses are paid to a Medicare-eligible claimant to the Centers for Medicare and Medicaid Services (CMS) in compliance with the Medicare Secondary-Payer Mandatory-Reporting Requirements.
7. To maintain a file for each qualified claim or loss, which shall be available for review by the City at any reasonable time.

8. To notify Excess of Loss and/or Aggregate Stop Loss insurers of the City of all qualified claims or losses according to the terms of the Excess or Aggregate agreements and provide reports in accordance with Article VII, Paragraph 2 below.

9. To employ its best efforts to pursue all qualified claims, determining if the facts support a claim by the City for subrogation and aggressively pursue the maximum amount possible for all qualified claims against third parties.

10. To assist the City's legal counsel or experts, when and as requested, in preparing the defense of litigated cases and negotiating settlements.

11. To coordinate with such other firms as the City may direct to assist in servicing Tort Liability claims or accounts. It is understood at this time that no such firms are now under contract with the City and the City agrees not to employ other firms to meet any services specifically addressed in this Agreement to be provided by PAI.

12. To maintain a current estimate of cost of all anticipated losses (hereinafter referred to as loss reserves) on each qualified claim or loss.

14. To use computer programs to furnish to the City selected loss and informational reports either monthly, quarterly, or annually which are described under Article VII below.

15. To present a Claims Administration Report to the City periodically as requested by the City.

16. To attend and participate in meetings with City as requested to provide background and instruction to Risk Managers relating to Tort Liability procedures and claims-handling.

17. PAI agrees to have a Claims Adjuster to attend hearings, or meetings as required by the City.

18. To immediately notify the City's legal counsel of any claim, loss or report of any occurrence involving serious bodily injury or death or which may potentially exceed Fifty Thousand and 00/100 (\$50,000.00) Dollars for bodily injury and/or property damage.

Article VI: Duties & Obligations of City

1. At all times, the City agrees to provide adequate funds for the payment of both qualified claims and losses and of Allocated Loss Adjustment Expenses (ALAE). For the purposes of this Agreement, ALAE shall mean costs, charges, or expenses of third parties, incurred by PAI, its agents or its employees, which are properly chargeable to a qualified claim or loss. These expenses include, without limitation, investigators, experts and witnesses, and fees for obtaining diagrams, reports, documents and

photographs.

2. The City agrees that PAI shall not be required to advance its own funds to pay losses or ALAE on behalf of the City.

3. The City agrees to deposit such funds in a bank account or accounts established by PAI in connection with this agreement. The City shall arrange for PAI to write checks on the account or accounts for use in the payment of the City's qualified claims, losses and ALAE. Such funds shall be provided at the inception of this Agreement in the amount of Fifty Thousand and 00/100 (\$50,000.00) Dollars and replenished promptly from time to time thereafter as needed upon notice by PAI to City.

4. The City agrees to provide PAI payment authority and discretion to make settlements of qualified claims and losses, and to spend money for the adjustment of, and administration of claims, within certain restrictions.

5. The City agrees that PAI shall have full discretion to redeem, compromise, or settle any qualified claim or loss for an amount not to exceed Ten Thousand and 00/100 (\$10,000.00) Dollars for bodily injury, personal injury, and property damage, except for sewer back-up and water main breakage claims or losses and claims or losses involving allegations of false arrest, malicious prosecution, excessive force or violation of civil or constitutional rights. Sewer back-up and water main breakage claims or losses should be adjusted in compliance with the protocol to be provided to PAI by the City, within the same authority for property damage (\$10,000.00). PAI shall immediately advise of and confer with City's legal counsel of any claims or losses involving allegations of false arrest, malicious prosecution, excessive force or violation of civil or constitutional rights and obtain authority from the City to redeem, compromise or settle such cases for any amount. PAI shall obtain settlement authority from the City to redeem, compromise, or settle any qualified claim or loss which exceeds its authority.

6. The City agrees that PAI shall have full discretion to make discretionary payments on any qualified claim or loss for expenses required in investigating, administering, defending and adjusting qualified claims and losses for an amount not to exceed Two Hundred and 00/100 (\$200.00) Dollars.

7. The City agrees PAI shall write checks on the account or accounts for use in the payment of the City's qualified claims, losses and allocated loss adjustment expenses (ALAE).

8. The City and PAI agree that any of the amount of check-writing authority herein may be changed at any time by the City upon ten (10) days prior written notice to PAI. PAI will print and write all checks contemplated herein.

Article VII: Management of Information Reports

1. PAI agrees to maintain computer programs for the purposes of monitoring and tracking qualified claims and losses (open and closed) that have been reported to

the City.

2. PAI agrees to provide the City selected loss and informational reports either monthly, quarterly, or annually in a format to be mutually agreed upon by City and PAI.

3. PAI shall provide such electronic files and database information, on a monthly basis, as the City requires, and keep a current detailed historical database of all City claims in compliance or compatible with the Public Risk Database as is practical.

Article VIII: Service Fees and Incentives

In consideration of the agreed services to be provided by PAI under this Agreement the City agrees to the following Service Fee Schedule for new claims incurred after the effective date of this Agreement (See Attachment A – City of Columbia Tort Liability Pricing).

The basis of all claim charges will be "Life of Contract", meaning that the payments by the City to PAI described herein obligate PAI to perform services only during the term of this Agreement.

Article IX: Signatures

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed on the day and date first above written.

WITNESSES:

City of Columbia (S.C.)

BY: _____
Teresa B. Wilson
Title: City Manager

Planned Administrators, Inc.

BY: _____
George Stiles
Title: VP of Operations

APPROVED AS TO FORM

Legal Department City of Columbia, SC

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ATTACHMENT A**City of Columbia Tort Liability Pricing**

The following exhibit presents our ESTIMATED methodology for developing a minimum annual fee based on the historical average of claims activity CITY OF COLUMBIA has experienced in the past.

Approximate Historical Basis:

<u>Year:</u>	<u>Auto PD</u>	<u>Auto BI</u>	<u>Auto PD&BI</u>	<u>GL PD</u>	<u>GL BI</u>	<u>GL PD&BI</u>	<u>Sewer</u>	<u>All Other Losses</u>	<u>Total</u>
2016:	206	0	23	577	21	3	42	3	875
2017:	194	1	34	574	48	0	67	0	918
2018:	241	1	22	639	43	7	33	1	987
Totals:	641	2	79	1790	112	10	142	4	2780
3yr Avg: 214	1	26	597	37	3	47	1	927	

PAI is committed to providing the City of Columbia with aggressive pricing that reflects the unique value that PAI provides with respect to tort claims administration in South Carolina. Our pricing is on a "life of contract" basis and based on a number of elements, including:

1. A review of the number of claims by type (Auto PD, Auto BI, Auto PD & BI, GL PD, GL BI, GL PD & BI, Sewer and All Other Loses) that we capture in our claims system;
2. An estimate of the effort involved in processing the claims (including labor, software, infrastructure and materials cost) based on PAI current understanding of the processes and needs by the City of Columbia;
3. Exclusive value added by PAI that results in savings to the City of Columbia.
4. Ancillary services provided by PAI in connection with the administration.

Claims Fee:

The basis of our pricing was determined after reviewing the number of claims by type provided by you, which averaged 927 claims per year over the past 3 full years.

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Based on the above averages, we propose the following:

Basis: "Life of Contract":

Auto PD:	\$375 per claim
Auto BI:	\$695 per claim
Auto PD & BI Combined:	\$795 per claim
GL PD:	\$375 per claim
GL BI:	\$695 per claim
GL PD & BI Combined:	\$795 per claim
Sewer:	\$350 per claim
All Other Losses & Notice Onlys:	\$150 per claim

Based on the 3 year averages for claims activity, PAI projects a yearly estimated claim fee of **\$370,190**. If the number of claims is less than the projected averages the yearly claim fee will be less. However, if the number of claims exceeds the average claims per year as noted above, the City of Columbia would pay the per claim rates above for each claim over the average.

PAI would charge **\$92,547** per quarter annually.

Since PAI is the incumbent TPA, this fee does not include run-off of open claims with accident dates prior to effective date of our agreement.

Pass Through Fees:

Index fees are charged for researching claims through Insurance Services Office (ISO) national database. This is to determine if other claims that may have been made by the claimant and may indicate potential fraudulent claims. These fees will be charged at the prevailing rate by ISO (approximately \$11 to \$12 per claim).

In addition, claims are submitted to CMS via ISO. These fees will be charged at the prevailing rate by CMS (approximately \$7.30 per claim).

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Annual Administration Fees:

The annual administration fees include Section 111 Medicare Reporting and all standard reports. This fee is \$2,500 annually and can be paid quarterly.

Ancillary Services:

10% of all subrogation recoveries.

Pricing for other services are available.

Payments:

At the City's option, PAI will provide a fixed quarterly payment schedule for the Claims Fees and Bill Review Fees set forth above.

If the City selects a fixed payment schedule, the total fee will be reconciled annually and any overage or underpayment will be rolled into the following year's payment schedule.

Comments:

- a) Above fees covers all Unallocated Loss Adjustment Expense (ULAE), for example: Claims Adjuster salaries, benefits, travel expenses, overhead, management reports, etc.



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Procurement and Contracts

FROM: Sandra Wright, Purchasing Agent

SUBJECT: Council is asked to approve an Engineering Services Agreement for Project SS7474; North Richland Crane Creek and Upper North Branch Sewer Improvements Phase I, as requested by Columbia Water. Award to Michael Baker International in the amount of \$450,505.00. This firm is located in Columbia, SC.

PURPOSE: This is a Clean Water 2020 Program Project and Mentor Protégé Program Project. Michael Baker International of Columbia, SC is the Mentor and will provide project management at 68.2% (\$307,120.00) of the total contract value. Case Consulting, a Minority Business Enterprise of West Columbia, SC is the Protégé and will provide project controls, meetings, scheduling, SharePoint reporting, and surveying at 15.1% (68,200.00) of the contract value. MBI will meet the 20% MPP requirement once the construction administrative service phase is authorized by the City.

The following sub-consultants will provide additional services:

F&ME Consultants, Inc. of Columbia, SC will provide evaluation and design phase project administration and surveying services at 11.8% (\$53,185) of the contract value.

Steadman & Associates of Columbia, SC will provide geotechnical services at 4.9% (\$22,000) of the contract value.

FUNDING SOURCE & ORIGINAL BUDGET: Funding Source: 5529999-SS74701-658650 - The original budget amount is \$450,505.00.

BUSINESS PROGRAM: Mentor Protege Program

CLEAN WATER 2020?: Yes

FOCUS AREAS: Economic Prosperity - Endless Possibilities

The above referenced Agreement is to compensate the Consultant for providing support in alleviating the overflow and surcharge within the Crane Creek sewer basin. The service being provided will encompass the following:

Task 100 - Evaluation and Design Phase Project Management and Administration

Task 200 - Preliminary Planning, Investigation, Engineering and Alternative Analysis

Task 300 - Survey and Utility Mapping

Task 400 - Geotechnical Investigation

Task 500 - Final Design

Task 600 - Permits and Property

Task 700 - Bidding and Award

Task 1100 - Client Controlled Contingency

Services to be performed will impact areas outside City Council Districts. The Office of the City Attorney has reviewed the Agreement and the ACM for Columbia Water and the Director of Utility Operations recommend its approval.

ATTACHMENTS:

- **#a:** SS7474-North Richland Crane Creek and Upper North Branch Sewer Improvements Phase I (PDF)
- **#b:** Exhibit E Location Map (PDF)



AGREEMENT FOR PROFESSIONAL SERVICES

This Agreement is being awarded under procurement method RFQ011-16-17-NMJ Category II Minor Wastewater Collection Systems Projects.

1. **PURPOSE** – This Agreement is entered into as of the date of the last signature affixed hereto, by and between the City of Columbia, South Carolina (hereinafter referred to as the "City") and Michael Baker International, (hereinafter referred to as the "Consultant"), to assist the City of Columbia in alleviating the overflow and surcharge within Crane Creek sewer basin. The combination of wet weather conditions and projected increases in residential and commercial/industrial flows causes this piping to convey more flow than that for which it was originally designed.

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

2. **SCOPE OF SERVICES** – Upon written notification by the City to proceed, the Consultant shall provide the scope of services more fully described in Exhibit A, attached hereto. The Consultant 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.
3. **SUPPLEMENTAL OR ADDITIONAL SERVICES** – The City may require supplemental or additional services of the Consultant or recommended by the Consultant and approved by the City in writing.

The Consultant must obtain written approval from the City for any supplemental or additional services prior to the work being performed. If the Consultant fails to obtain prior written approval to perform the work, the City is under no obligation to compensate the Consultant for services performed.

4. **TERM OF AGREEMENT** – The term of the Agreement is the date of the execution of this *Award* or a *Notice to Proceed* for an initial term of thirty (30) months, with the

option to renew or continue with work for one (1) additional one-year period at the mutual pleasure of both parties.

The decision whether to extend the Agreement, upon written request, shall be the sole and exclusive discretion of the City and neither party shall be under any obligation to agree to an extension of the initial term or any additional term.

5. **SCHEDULE FOR COMPLETION OF SERVICES** – The Consultant shall complete any and all services performed under this Agreement within the timeframes as outlined in Exhibit C, attached hereto.

6. **COMPENSATION** – (See Exhibit B)

- A. The total compensation to be paid by the City to the Consultant under this Agreement shall not exceed Four Hundred Fifty Thousand, Five Hundred Five Dollars and No/100 (\$450,505.00).

- B. The Consultant 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). Consultant must invoice monthly regardless of work being completed during that period. If no work is completed, a zero balance invoice should be submitted. **Each invoice must also clearly identify any portion of the fee invoiced for subcontracted services, including any such services that are specified in the Summary of Proposed Sub-consultants shown on Exhibit D hereto.** Each invoice shall bear the signature of the Engineer, whose 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.

- C. Invoicing Procedure: See Exhibit H

Failure of the Consultant to follow these invoice requirements will result in the delay of payment of the invoice.

D. Prompt Payment to Sub-consultants and Material Suppliers (Use Prompt Payment Affidavit Exhibit G)

1. The Consultant is required to pay all Sub-consultants and material suppliers for all work that the Sub-consultant has satisfactorily completed, no later than twenty (20) calendar days after the Consultant has received payment from the City.
2. In addition, all retainage amounts received from the City by the Consultant must be paid by the Consultant to the Sub-consultant no later than fourteen (14) calendar days after the Sub-consultant has, in the opinion of the Assistant City Consultant for Construction or his/her designee, satisfactorily completed its portion of the Work.
3. A delay in or postponement of payment to the Sub-consultant or material supplier requires good cause and prior written approval of the City's Assistant City Consultant for Construction or his/her designee.
4. The Consultant is required to include, in each Subcontract, a clause requiring the use of appropriate arbitration mechanisms or other method to resolve all payment disputes.
5. The City will not pay the Consultant for subsequent work performed unless and until the Consultant ensures that the Sub-consultants have been promptly paid for the work they have performed under all previous payment requests, as evidenced by the filing of City lien waivers, canceled checks (if requested), and the Engineer's sworn statement that it has complied with the prompt payment requirements. The Consultant must submit a Prompt Payment Affidavit, Sub-consultant list that identifies each Sub-consultant (both Disadvantaged Business Enterprises (DBEs) and non-DBEs) including Subcontract values and the date and amount of the last payment to such Sub-consultant(s). That documentation must be provided with every payment request submitted to the City, except for the first payment request.

6. Failure to comply with these prompt payment requirements is a breach of this Agreement. The City reserves the right to pursue any and all remedies permitted under law for breach of contract, including, but not limited to, Consultant debarment.

E. Affirmative Action Procurement and Contracting Goals:

It is the goal of the City of Columbia, SC to maximize opportunities for historically Disadvantaged Business Enterprises (DBEs) including, but not limited to, Small Business Enterprises (SBEs), Minority Business Enterprises (MBEs), and Women-Owned Business Enterprises (WBEs). The City has implemented an overall citywide 10% goal to encourage socially and economically disadvantaged business participation. This goal extends to bidders, contractors, Sub-consultants and suppliers on its procurement and contracting offerings.

Additional information on the City's affirmative action goals and objectives may be obtained by contacting the following office: City of Columbia Office of Business Opportunities, 1225 Lady Street, Suite 102, Columbia, SC 29201, (803) 545-3950.

The City's success in tracking the amount of business received by SBE, MBE and WBE firms (whether as a prime Consultant or Sub-consultant) is dependent upon the business community partnering with the City in this important endeavor.

The Consultant must comply with the affirmative action terms and conditions as outlined herein. The Engineer, shall in the performance of the Agreement, make constructive efforts to assist the City in complying with best practices in contracting as it relates to meeting affirmative action objectives

F. Subcontracting Goals

Under this Agreement, the subcontracting goals are as follows:

SB Goals	_____	%
MBE	<u>15.1</u>	%
WBE	_____	%
LSA	_____	%

The Consultant will ensure Sub-consultant performance during the period of performance, and optional periods as applicable. Achievement of these goals is expected during the life of the Agreement, including any extensions thereof.

7. **MENTOR-PROTÉGÉ PROGRAM** (<http://www.columbiasc.net/business-outreach/>) The City of Columbia encourages, where economically feasible, establishment of mentor-protégé relationships to ensure contracting opportunities for all businesses, including minority / women / small business enterprises. The Mentor-Protégé Program (MPP) helps develop private sector business relationships and enhances the contracting capabilities of minority-owned business enterprises (MBE), women-owned business enterprises (WBE), and small business enterprises (SBE). In order to provide opportunities for growth and to encourage hands-on business relationships, certain capital improvement projects may be designated by the City of Columbia as Mentor-Protégé Program projects. The City of Columbia has determined that participation in the City's Mentor-Protégé Program is required for this project. **The MPP goal for this requirement is 20%.**

The Consultant must comply with Mentor-Protégé Program Guidelines. The Consultant agrees that the Mentor Protégé Program does not create any third-party beneficiary status or contractual rights and/or duties between the City and the Protégé and that the City is not a party to the Implementation Plan. The Consultant agrees that it has or will enter into a separate contractual Agreement with the Protégé to which the City is not a party. The MPP Implementation Plan is attached hereto as Exhibit E.

8. INDEMNIFICATION & INSURANCE

- A. The Consultant shall procure and shall maintain during the life of this Agreement, whether such operation be by itself or by a Sub-consultant or anyone directly or indirectly employed by either of them, such insurance as required by statute, ordinance, or this Agreement, to adequately protect the City from any claims or damages including bodily injury or death, which may arise during performance and operations under this Agreement.

Each insurance policy required by these instructions shall be endorsed to state that coverage shall not be suspended, voided, OR cancelled by either party, reduced in coverage or in limits, unless thirty (30) days prior written notice, by certified mail, return receipt requested, has been given to the City.

Workers Compensation Insurance: The Consultant shall procure and shall maintain during the life of this Agreement, Workers Compensation Insurance for all employees to be engaged in work on the project under this Agreement, and in case any work is subcontracted, the Consultant shall require the Sub-consultant similarly to provide Worker Compensation Insurance for all of the latter employees to be engaged in such work unless such employees are covered by the protection afforded by the Engineer's Worker Compensation Insurance. The Consultant shall not permit any person who is not protected by Workers Compensation Insurance or a properly approved Self-Insured Workers Compensation Program to perform any activity related to this Agreement.

General Liability: The Consultant shall provide to the City evidence of General Liability insurance in an amount not less than One Million Dollars and no/100 (\$1,000,000) per occurrence, and Two Million Dollars and no/100 (\$2,000,000) dollars aggregate in accordance with the current Code of Ordinances, City of Columbia, South Carolina, which can be located at www.columbiasc.net.

Professional Liability: Professional Liability Insurance in an amount not less than One Million Dollars and No/100 (\$1,000,000.00) per occurrence, and Two Million Dollars and No/100 (\$2,000,000.00) Aggregate.

Michael Baker International
CIP SS7474 North Richland Crane Creek and Upper North Branch Sewer Improvements Phase 1

Automobile Liability Insurance: Five Hundred Thousand Dollars and No/100 (\$500,000.00) combined single limit per accident for bodily injury and property damage.

- B. The Consultant 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 Consultant and any Sub-consultant of the Consultant commencing any services under this Agreement and this insurance shall remain in effect throughout the term of this Agreement, and any extensions of service. Insurance shall remain in effect for the duration of the project and for a period of one (1) year after completion. The City of Columbia shall be the Certificate Holder and shall be named as an *Additional Insured*.
- C. The Consultant shall indemnify, defend, hold harmless and reimburse the City, its agents, and employees from and against any and all losses, liabilities, expenses, and all claims for damages of any nature whatsoever relating to or arising out of any action or failure to act by Engineer, its Sub-consultants, officers, agents and employees of any of the obligations under the Agreement. Losses, liabilities, expenses and claims for damages shall include, but will not be limited to, civil and criminal fines and penalties, loss of use or services, bodily injury, death, personal injury, or injury to real or personal property, defense costs, legal fees and costs, and attorney's fees for an appeal.

The Consultant will also agree to promptly notify the City of any civil or criminal actions filed against the Consultant or of any notice of violation from any federal or state agency, or of any claim as soon as practical as relates to the services provided under this Agreement. The City, upon receipt of such notice, shall have the right at its election to defend any and all actions or suits or to join in defense.

9. **PERMITS & LICENSES**

- A. The Consultant shall be responsible for obtaining any approvals, permits and/or licenses as may be required of the Consultant in performing the services required under this Agreement. The Consultant shall be responsible for any costs relating to same.
- B. The Consultant shall be responsible for identifying the necessity for and providing any applications and supporting documentation to the City for any approvals and/or permits required of the City in order for the Consultant to perform the services required under this Agreement. Such approvals and/or permits may include, but not be limited to, South Carolina Department of Health and Environmental Control (SCDHEC) Construction Permits, SCDHEC Storm water Management for Construction Sites Permits, SCDHEC Water Resources Permits, Corps of Engineers Permits, City/County/ South Carolina Department of Health and Environmental Control (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 Consultant and pay any costs relating to same.
- C. The Consultant 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 Consultant shall procure a City of Columbia business license while performing services under this Agreement.

10. **DUTIES UPON TERMINATION** – At termination of this Agreement, the Consultant shall immediately provide the City with all records and data in any format the Consultant is capable of producing and at no cost to the City, which were generated, created or received by the Consultant 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 Consultant agrees to fully cooperate with the City and any successor to ensure an effective transition to continuously provide the required services.

11. **INTEREST OF CONSULTANT**– The Consultant covenants that Consultant presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which is adverse to the interests of the City. The Consultant further covenants that in the performance of this Agreement no person having such interest shall be employed.

The Consultant is expected to make Engineer's services available to other entities but agrees to refrain from representing other entities in matters where the position of the City conflicts with that of the other entity. The City may at its discretion, waive this provision. The Consultant has provided a list of all of its clients with whom there may be potential conflicts with the City. This list shall be supplemented throughout the duration of this Agreement.

12. **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 Consultant fails to perform any of the services required in this Agreement and does not correct such deficiency within fifteen (15) days after being notified by the City of such deficiency;
 - C. Force Majeure;
 - D. The City, at its sole option and discretion, has the right to terminate this Agreement 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 Consultant shall only be entitled to the actual direct costs of all labor and material expended on the services required under this Agreement prior to the effective date of the termination or the Consultant 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 Consultant be entitled to anticipatory profit or damages for any termination under this Agreement. In no event shall the Consultant be entitled to assert a claim in quantum merit or any other measure of damages other than that stated herein.

- 13. **OWNERSHIP OF PROJECT** - All data, documents or other information of any description generated by or used by the Consultant or any Sub-consultant retained by the Consultant and related to the services required by this Agreement shall be the property of the City and shall not be used by the Consultant for any purpose whatsoever except to perform the services required by this Agreement.
- 14. **OWNERSHIP OF PROJECT DOCUMENTS** - All data, documents or other information of any description generated by or used by the Consultant or any Sub-consultant retained by the Consultant and related to the services required by this Agreement shall be the property of the City and shall not be used by the Consultant for any purpose whatsoever except to perform the services required by this Agreement.
- 15. **NOTICE** - All notices and communications in connection with this Agreement will be addressed to the following:

City of Columbia

Name: Office of Procurement and Contracts
 Title: Purchasing Agent
 Address: 1800 Main Street
 Second Floor

Michael Baker International

Name: John Walsh
 Title: Vice President
 Address: 700 Huger Street
 Columbia, South Carolina, 29201

Michael Baker International

CIP SS7474 North Richland Crane Creek and Upper North Branch Sewer Improvements Phase 1

Columbia, SC 29201

Phone: (803) 545-3470

Fax: N/A

Email: procurement@columbiasc.gov

Phone: 803-231-4000

Fax: N/A

Email: john.walsh@mbakerintl.com

16. **CONSENT DECREE**

- A. The services performed by the Consultant pursuant to this Agreement are required in whole or in part to satisfy the terms of the Consent Decree entered by the United States District Court for the District of South Carolina on May 21, 2014, in the case captioned *The United States of America and State of South Carolina by and through the Department of Health and Environmental Control v. City of Columbia*, Civil Action No. 3:13-2429-TLW (the "Consent Decree"), a copy of which has been provided to the Consultant by the City and is incorporated by reference herein. The Consultant shall perform the services pursuant to this Agreement in conformity with the terms of the Consent Decree as required by Paragraph 5 therein.
- B. In addition to the requirements above, the Consultant shall comply with the document retention requirements of Paragraph 68 of the Consent Decree which includes, but is not limited to, the obligation to preserve all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in the Engineer's possession or control that relate in any manner to the Engineer's performance under this Agreement ("Preserved Documents"). Upon the Engineer's performance of all services required under this Agreement, the Consultant shall provide the City with all Preserved Documents. In addition to the requirements above, the Consultant shall provide the City with all Preserved Documents upon termination of this Agreement.
- C. Upon the occurrence of a force majeure event as defined in Paragraph 55 of the Consent Decree, the Consultant shall provide notice to the City's Director of Utilities and Engineering in person, by phone, or by electronic mail within twenty-four (24) hours of when the Consultant first knew or should have known

that the event might cause a delay. Within three (3) days thereafter, the Consultant shall provide written notice in accordance with Section XII above to include the following information: an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken in an effort to prevent or minimize the delay; a schedule for implementation of any measures to be taken in an effort to prevent or mitigate the delay or the effect of the delay; and the Engineer's rationale for attributing such delay to a force majeure event. The Consultant shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure event.

- D. The Consultant shall reimburse the City the amount of any stipulated penalties imposed on the City pursuant to Paragraph 47 of the Consent Decree if the Consultant neglects, fails, or refuses to meet the deadlines set forth in Exhibit C attached hereto. The Consultant agrees that any failure to meet such deadlines will result in the City's failure to meet the deadlines set forth in the Consent Decree except in the event of force majeure notice by the Consultant that results in the extension of said deadline by the U.S. Environmental Protection Agency under the Consent Decree. The City reserves all other remedies available for the Engineer's failure to perform pursuant to the Agreement.
- E. The Consultant shall perform the services pursuant to this Agreement using sound engineering practices as set forth in Paragraph 9 of the Consent Decree.

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

- C. The Consultant will not assign or sublet its obligations to perform the services required by this Agreement without the written consent of the City. The Consultant shall be as fully responsible to the City for the acts and omission of its Sub-consultants, as it is for the acts and omissions of persons directly employed by the Engineer.

The Consultant shall furnish and its Sub-consultants shall furnish all information and reports required hereunder.

- D. In the event there are any disagreements between the City and the Consultant with regard to any of the requirements, specifications or interpretation of this Agreement, the Consultant 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 and City of Columbia Code of Ordinances and those of the State of South Carolina. The Consultant agrees to subject itself to the jurisdiction and venue of the courts of Richland or Lexington 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 Consultant 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 Consultant and supersedes all prior communications, negotiations, representations or agreements, either written or oral. The parties may amend this Agreement at any time provided that such Amendments are executed in writing, signed by a duly authorized representative of both organizations, and approved, where applicable, by the City's governing body.

The City may, in its discretion, amend this Agreement to conform with federal, state, or local governmental guidelines, policies and available funding amounts, or for other reasons. If such Amendments result in a change in the funding, the scope of services, or schedule of, the activities to be undertaken as part of the

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Agreement, such modifications will be incorporated only by written amendment signed by both the City and the Consultant.

- G. The failure of either the Consultant 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 Consultant acknowledges, for itself and its Sub-consultants, that it 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, "A person may not, directly or indirectly, give, offer, or promise anything of value to a public official, public member, or public employee with intent to:
 - 1. influence the discharge of a public official's, public member's, or public employee's official responsibilities;
 - 2. influence a public official, public member, or public employee to commit, aid in committing, collude in, or allow fraud on a governmental entity; or,
 - 3. induce a public official, public member, or public employee to perform or fail to perform an act in violation of the public official's, public member's, or public employee's official responsibilities.

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"Anything of value" includes, but is not limited to, lodging, transportation, entertainment, food, meals, beverages, money, gifts, honorariums, discounts and interest-free loans.

- K. In carrying out services under this Agreement, the Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation or national origin. The Consultant shall take affirmative action to ensure equal employment opportunities for all applicants for employment, without regard to their race, creed, color, religion, ancestry, sex, sexual orientation, national origin, disability or other handicap, age, marital status, or status with regard to public assistance. Such action shall include, but not be limited to, the following: employment, promotion, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Consultant shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The Consultant will incorporate these nondiscrimination requirements in all subcontracts for work under this Agreement.
- L. This Agreement shall be binding upon the respondent and upon its successors and assignees. This Agreement shall be binding upon the City in accordance with its terms and provisions.
- M. All of the reports, information, data, records or documents of any kind, prepared or assembled by the Consultant under this Agreement are matters of public record, but that the Consultant agrees that they shall only be made available to any individual or organization by the City and the Consultant shall not make them available to any individual or organization without the prior written approval of the City.
- N. Every exhibit, schedule and appendix attached to this Agreement and referred to herein is hereby incorporated into this Agreement by reference unless this Agreement expressly provides otherwise. This Agreement, exhibits and other

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documents include, but are not limited to the Conflict of Interest Statement, Non-collusion Affidavit, Business Information Record for Sub-consultants /Subcontractors, Local Business Enterprise, and Mentor Protégé Implementation forms are incorporated by reference in this Agreement and set forth the entire understanding between the parties hereto regarding the subject matter hereof.

INTENTIONALLY LEFT BLANK

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

CITY OF COLUMBIA, SOUTH CAROLINA

Witness

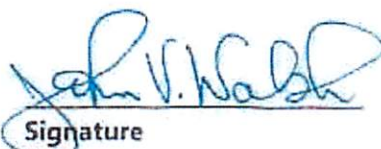
Teresa Wilson, City Manager

Date: _____

MICHAEL BAKER INTERNATIONAL

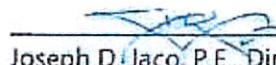
John V. Walsh, PE
Vice President

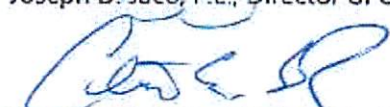
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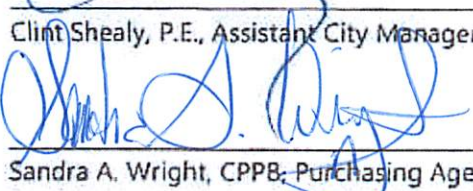

Signature

Date: 5/2/2019

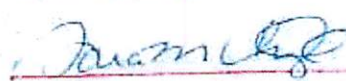
Recommended by:


Joseph D. Jaco, P.E., Director of Utility Operations


Clint Shealy, P.E., Assistant City Manager for Columbia Water


Sandra A. Wright, CPPB, Purchasing Agent/Director of Procurement and Contracts

APPROVED AS TO FORM


Legal Department City of Columbia, SC

List of Exhibits

Exhibit A – Scope of Services

Exhibit B – Compensation

Exhibit C – Schedule for Completion of Services

Exhibit D – Sub-Consultant Form

Exhibit E- Location Map

Exhibit F – MPP Plan

Exhibit G- Prompt Payment Affidavit

Exhibit H- Invoicing Procedure

EXHIBIT A

SCOPE OF SERVICES

City of Columbia CIP # SS7474

North Richland Crane Creek and Upper North Branch Sewer Improvements Phase 1

The services performed by Michael Baker International, Inc. (CONSULTANT) as a part of this Scope of Service include providing technical consulting support to the City of Columbia (CITY) for a sewer line capacity enhancement project, including evaluation of alternative alignments, and engineering services during design and bidding for the project.

The Upper North Branch and North Richland Crane Creek Sewer Improvements project sewer improvement project, SS7474, involves replacement and upsizing of approximately:

- 2,700 LF sewer from Manhole SS-CC12-01714-MH to Manhole SS-CC12-01488-MH from 18-inch to 21-inch,
- 6,000 LF sewer from Manhole SS-CC12-01488-MH to Manhole SS-CC12-01463-MH from 18-inch to 30-inch,
- 4,700 LF sewer from Manhole SS-CC12-01463-MH to Manhole SS-CC11-28551-MH from 21-inch to 30-inch.

The Consultant shall coordinate the upstream connection of this project (at Manhole SS- CC12-01714-MH) with the Upper North Branch Crane Creek Extension project - SS735002. The Consultant shall also coordinate the downstream connection of this project (at Manhole SS-CC011-28551-MH) with the Lower North Branch Crane Creek Capacity Upgrade Phase 1 project - SS735003.

In this scope and all associated attachments, the CITY and OWNER are synonymous. All communication and/or meetings will be with either CITY staff and/or the Project Manager from Clean Water 2020. The general location of the project is shown on Figure 1 (attached).

In general, CONSULTANT will provide the following scope of services:

- Review of all Available Data
- Preparation and Evaluation of Alignment Alternatives
- Development of a Recommended Route Plan
- Public Relations
- Engineering Design and Permitting
- Bidding Phase Support

CONSULTANT will also be participating in the City of Columbia's Mentor Protégé Program as part of this project, Firm Case Consulting, Inc. as the Protégé.

TASK 100 – Evaluation and Design Phase Administration

110 General Project Administration

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

- Maintain regular contact through the CITY's staff throughout the project.
- For Tasks 100 through Tasks 700, provide monthly schedule updates pertaining to Consultant's portion of the work to the CITY. The schedule shall be included with an updated Monthly Progress Report to be submitted with a draft invoice to the CITY for review. A project schedule shall be created and updated not less than monthly in MS Project or Primavera P6. The initial detailed project schedule shall be reviewed by the CITY before proceeding with the Scope of Service. The schedule shall begin based on the date on the Notice to Proceed and shall use the calendar days as outlined in Exhibit C (Gantt schedule). All documents provided to the CITY for review and approval shall be provided in hardcopy and electronically in PDF format and loaded to SharePoint at a minimum.
- Invoice monthly and include amounts invoiced by sub-consultants in accordance with the City's invoicing procedures.
- Implement and adhere to internal quality control and quality assurance procedures and ensure all work performed by subconsultants and subcontractors meets these quality control and quality assurance procedures prior to issuance of all deliverables.
- Terminate Project Administration at the completion of Task 700

120 Coordination Meetings

Throughout design of the project, Consultant will maintain regular contact through the CITY's staff. Progress meetings include:

- A kickoff meeting at the beginning of the project and monthly progress meetings with CITY's Project Manager for duration of project of Tasks 100 through 700 and will include a 30-Percent Design Review Meeting. The Consultant will issue meeting minutes for each meeting. During Task 500, the Consultant will hold a progress meeting at the 90-percent design completion milestone. At the project milestones (30-, 60-, and 90-percent), the Consultant will compile all comments received during the meetings and respond to one consolidated set of comments from the CITY utilizing the CITY's Standard Comment Form. Responses to the comments will be checked for acceptance by individual commenters before being accepted and closing out the individual comment. At the conclusion of final design, drawings and specifications will be submitted to the CITY for final review and approval. Revisions to the drawings will subsequently be made to incorporate the CITY's comments. This

scope assumes four sets of design and construction documents will be delivered for each submittal (30-, 60-, and 90-percent, draft, final, and final bid set). Electronic copies of the contract documents will also be delivered in PDF format and loaded to SharePoint unless specified otherwise. Milestone checklists will be used by the CITY's review team during the 30- and 90-percent design review meetings. A copy of these checklists will be provided by the CITY.

- Public Meeting (Task 140)
- Draft and Final PER review meetings (Task 270) – (the Final PER review is considered 30-percent total project review meeting and could serve as a monthly review meeting)
- 60- and 90-percent review of design meetings (Task 570)
- Pre-Bid Meeting (Task 710)

130 Project Management & Coordination with the CITY

- Consultant will communicate with the CITY through a single point of contact, Consultant's Project Manager.
- Consultant will use SharePoint, provided by the CITY, to share and file documentation of project progress, data, decisions, deliverables, design and management of the project.
 - All documents should be loaded to SharePoint within seven (7) days. Consultant is responsible for checking the site monthly and addressing any deficiencies to ensure all content is current, follows the City's standard naming convention for documents, and that all content is loaded under the most appropriate category for each document. Consultant is responsible for breaking out documents such as invoices, monthly progress reports, schedules, etc. into separate categories (not scanning and loading multiple category documents into one file) so they can easily be found by searching by category and/or by document name.
- Consultant will adhere to and update Gantt schedule as shown in Exhibit C.
- Consultant will conduct coordination meetings as outlined in Task 120 of this agreement.

140 Public Outreach

Consultant will provide public relations for this project to include:

- Implementation of the CITY's Public Relations Plan and public notification as required in the specifications during the system evaluation and design phase of the project. Consultant shall attend, at a minimum, one public meeting (Columbia Water Quarterly Drop-In) that will occur at approximately the 90 percent design milestone (Task 270). Consultant shall prepare design technical documents and materials for the meeting, including draft design plans.

Consultant shall also have a computer with data accessible to show project area mapping, CCTV videos, zoom camera videos, photos, etc. of the project area and will show the information upon request at the meeting.

- Conduct one (1) public meeting prior to completing route selection (topics included are overview of project description and its purpose, schedule, properties effected, what to expect during design and construction, anticipated easements, restoration of property, contacts for communication with CITY and Consultant.)
- Consultant will prepare all displays and handouts needed for the meeting(s).

150 Mentor-Protégé Program

Consultant and Case Consulting Inc. will provide the following in compliance with the City of Columbia's Mentor-Protégé Program:

- Consultant will continue the existing Mentor-Protégé Agreement with Case Consulting Inc.
- Consultant will update the existing Mentor-Protégé Business Plan per the "City of Columbia Mentor-Protégé Program Guidelines."
- The updated Mentor-Protégé Project Scope and Mentor-Protégé Business and Implementation Plans will be presented to the City of Columbia for approval.
- Schedule and attend all quarterly developmental meetings.
- Comply with deadlines for furnishing information required under the Mentor-Protégé Program.
- Document and maintain copies of communications between the Mentor and the Protégé.
- Prepare and submit a quarterly report form to the City of Columbia's Office of Business Opportunities.

160 Task 100 Deliverables

- Monthly Progress Reports, Invoices, and Schedule updates
- Agenda and Minutes for (12) meetings
- Minutes, with City review comments, from the two milestone review meetings
- (4) Quarterly Mentor-Protégé Program Reports

TASK 200 – Preliminary Planning, Investigation, Engineering and Alternative Analysis

210 General Data Collection, Field Recon and Coordination

- Consultant will coordinate with the CITY to obtain existing utility mapping in the project area.
- Consultant will obtain county tax map records for identifying property potentially affected by the project.
- Consultant will obtain SCDOT, County and CITY maps for road and street right-of-way information.
- Consultant will contact other utilities in the area that can be determined from field observation for mapping and location information that may impact alignment of the proposed sewer.
- Consultant will use existing aerial mapping along with utility mapping, county property maps and street right-of-way information to determine possible sewer line routing alternatives in a table top type route analysis.
- Field Reconnaissance:
 - Based upon the table top analysis, field reconnaissance will be conducted on the identified routing alternatives. Observation during the field reconnaissance will be recorded and used to identify qualifying or disqualifying issues associated with the routing alternatives.
 - Consultant will meet with the CITY to discuss results of the data gathering and field reconnaissance. Upon agreement of the resulting possible alternatives more detailed evaluation of alternatives will be conducted.

220 Alternative Analysis and Route Selection

- Upon completion of Task 210, Consultant will proceed with alternative analysis including the following alternatives:
 - Relocating the new gravity line within or adjacent to the existing sewer line easement (same general alignment as the existing line).
 - Relocating the new gravity line along a different alignment.
 - Relocating the new gravity line within or adjacent to the existing sewer line easement except in selected areas where it may be advantageous to vary the alignment outside the existing easement to avoid construction and maintenance conflicts.

230 Preliminary Agency Coordination and Meetings

- Upon selection of final route selection, Consultant will contact all known regulatory agencies that may have jurisdiction in the project area to coordinate any permitting and notification actions required. These agencies include:
 - U.S. Army Corps of Engineers
 - Richland County

- South Carolina Department of Health & Environmental Control (SCHDEC)
- South Carolina Department of Transportation (SCDOT), if applicable.

240 Preliminary Utility Coordination and Meetings

- Upon selection of final route selection, Consultant will contact all known utilities located in the project construction area to coordinate any easements, encroachments, and design considerations to be addressed.
- Consultant will provide utility coordination for the project and provide utility mapping for the selected route.

250 Design Criteria

- CITY will provide the hydraulic report by Hazen & Sawyer to support the sizing of the proposed gravity line design and the adequate capacity of the downstream system components.
- Decision factors for the alternative analysis will be developed by the Consultant and reviewed by the CITY. Possible evaluation factors include; cost, constructability, access for maintenance, public impact, property, permitting, utility and other relevant factors as to provide recommendations for the most economical and reliable solution.
- Consultant will design the new gravity line in accordance with SCDHEC regulations, the CITY standards, permitting requirements, and standard civil engineering practices.

260 Opinion of Probable Construction Cost and Schedule

- As part of the alternative routing analysis the Consultant will prepare an opinion of probable construction cost and update the project schedule.

270 Preliminary Design Reviews

- Consultant will prepare a report of findings and recommendations for review by the CITY.
 - Consultant will conduct a draft PER/replacement alternative task progress meeting to discuss preliminary findings and discuss early elimination of any alternatives for which it becomes obvious there is not a feasible solution.
 - Consultant will convene a final PER/replacement alternative meeting with the CITY to present the results of the study and solicit feedback on the recommended alternative.

280 Preliminary Alternative Analysis and Engineering Report

- Upon approval by the CITY, Consultant will prepare a final report documenting the alternative analysis criteria, evaluation, decision process and findings to include the final alignment recommendation and preliminary opinion of probable project cost. This submittal will be considered the 30-percent overall project completion review.

290 Task 200 Deliverables

- Agenda and Minutes from the three (3) progress review meetings
- Draft and Final Preliminary Engineering Report
- Meeting materials and notes for utility and regulatory agency meetings

TASK 300 – Survey and Utility Mapping

Once the final alignment has been selected by the CITY, field investigations for that alignment shall be conducted in support of plans preparation and final design.

310 Wetlands Survey

- "Waters of the United States", including streams, wetlands, and most ponds and lakes, are subject to Section 404 of the Clean Water Act, administered by the United States Army Corps of Engineers (USACE), and Section 401 of the Clean Water Act. CONSULTANT will delineate wetlands along the pipeline route using the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987), and the most recent supplementary technical literature for hydric soil, hydrology, and hydrophytic vegetation indicators. Jurisdictional waters other than wetlands (i.e., stream channels and impoundments) will be defined using USACE field indicators. CONSULTANT will mark the jurisdictional boundaries of waters of the U.S. within 50 feet of the proposed alignment of the sewer lines in the field with sequentially numbered survey ribbons. Wetland flags, non-wetland waters, and selected reference landmark locations will be recorded using GPS units with sub-meter accuracy.
- The CONSULTANT will record the necessary data and complete wetland delineation data sheets (a summary of findings and characteristics of the site, a map depicting the jurisdictional boundaries of waters of the U.S., and data point locations), which are required by USACE for confirmation, and develop the site map based on GPS survey of the limits of wetlands and waters. One wetland, and one corresponding upland data point will be recorded for each wetland feature delineated. The results of the wetlands delineation, summary of findings and characteristics of the project site, collected wetlands data points, and mapping will be summarized in a Wetlands Delineation Report. The CONSULTANT shall submit the Wetland Delineation Report and an official Jurisdictional Determination Request form to the USACE for official determination of the jurisdictional waters of the U.S. Only the USACE can officially determine if a wetland or water is jurisdictional. If needed, the CONSULTANT will schedule an on-site meeting with the USACE to verify the delineation and obtain written jurisdictional determination of the delineation.

320 Field Survey

- Consultant shall coordinate with CITY to send survey notification letters. Consultant to provide addresses and property owners.
- All surveying shall be in accordance with current South Carolina surveying standards and conducted using conventional, GPS, or other accepted methods.
- Horizontal datum shall be: SC State Plane Coordinates NAD83 (2007)
- Vertical datum shall be: NAVD 88
- The Consultant's surveyor will complete field surveying along a 100-foot wide corridor of the proposed pipeline alignment. All relevant visual or physical features along the route will be surveyed including significant, "specimen" or hardwood trees 9 inches in diameter and larger in fair or better condition, rock outcroppings, structures, geotechnical bore locations, etc. and will make detailed records for inclusion in field survey files. Detailed surveying associated with mapping delineated wetland boundaries is not included in this scope of services. Consultant's surveyor shall recover existing horizontal control monuments and establish GPS control points along the pipeline alignments. Consultant's surveyor shall traverse along the proposed pipeline route to locate existing sanitary sewer manholes, property boundaries, and other existing utilities and physical features. Consultant's surveyor shall recover existing vertical control points. Temporary benchmarks (TBMs) will be established along the project corridor at approximately 1,000-foot intervals. Consultant's surveyor will also provide top of bank, bottom of bank, and water surface elevations at all water crossings along the proposed pipeline alignments. Significant rock outcroppings shall be identified.
- Locate both horizontally and vertically (where appropriate) along the routes of each of the proposed sewer lines, all exposed structures, land features, property corners (as required), marked utilities, etc., such as, but not limited to, location of paved roads and driveways (w/type identified); stormwater culverts with inverts and any headwalls or inlet/junction boxes (w/size and invert elevations identified); stormwater ditches (w/top and bottom of banks identified); power poles and guy wires (w/connection of overhead power lines to adjacent poles); electric boxes; gas valves and meters; water valves, meters, and fire hydrants; exposed pipes (w/type, diameter, and material identified); cable boxes; telephone pedestals; mailboxes; fences; signage (street name, traffic, etc.); tree and brush lines; all trees of sufficient size that require protection according to applicable sections of Richland County's current tree ordinance (with identification of size and type); and any other miscellaneous aboveground structure or feature.
- All underground utilities as identified and marked in the field by the local utility locating service or the Consultant's Subsurface Utility Engineering sub-consultant shall be located by the survey. This shall include, but not be limited

to, all electric, gas, water, cable, stormwater, fiber optics, and telephone service lines. It will be the responsibility of the Engineer's surveyor to contact the utility locating service in the appropriate amount of time prior to field surveying, such that all service lines as identified can be properly located. The Engineer's surveyor will, at a minimum, contact the Palmetto Utility Protection Service (P.U.P.S.) at 1-800-721-7877 and CITY for field locating all underground utilities.

- All State and County ROWs and any existing obvious and apparent utility easements within the project limits shall be researched through the appropriate entity and identified by the Consultant's surveyor for use during the survey and used for design purposes. This information shall be included in the electronic file and survey drawings.
- Cross Sections along the center of the pipe route shall be taken every 100 feet at a minimum and at locations in between as required to define changes in slope, ditch crossings, etc., as necessary to develop an accurate topography of the survey extents.
- The Consultant shall determine the necessary corridor to be surveyed for this project. At a minimum, topographic survey and cross sections will include up to a 100- foot corridor along the recommended alignment a. Where the gravity sewer is located adjacent to an existing roadway, the opposite side of pavement and driveways will be horizontally located to facilitate developing traffic control plans for the construction phase. Where the gravity sewer is within the road right of way, the adjacent owners property corners will attempt to be located.
- From the survey data, the survey subcontractor shall prepare final AutoCAD 2010 electronic files of the entire survey that accurately locates all horizontal (planimetric) features and contains, on separate layers, all feature labels and all surveyed points with point number, description, and elevation.

330 Property Research and Easement Exhibits

- In consultation with CITY, the Consultant's surveyor shall survey, research, plat, and prepare all easement descriptions for all required permanent easements that will be required to construct the proposed transmission main. Exhibits shall be prepared in accordance with the standards of the CITY for recording. This Scope of Services is based on preparing up to 27 easement exhibits. An amendment will be issued if additional easement exhibits are required.

340 Utility Mapping

- The Consultant's surveyor shall provide existing utility information along the route of the survey. This information will be obtained with assistance of PUPS. No Sub Surface Utility Engineering (SUE) is proposed for this project; however, a minimum of eight (8) Test Holes shall be included in the cost of the project to determine utility depths.

350 Task 300 Deliverables

- Copy of the Wetland Delineation Report and Jurisdictional Determination Request
- List of property owners along the survey route for notification
- Easement Exhibits

TASK 400 – Geotechnical Investigation

410 Field Investigation

- Consultant will use FM&E for geotechnical services to provide subsurface soil conditions along the proposed project routing. Up to 24 borings will be performed along the preferred routing to determine general soil conditions. This information will be used to design pipe bedding details, evaluate soils for potential dewatering requirements, the capability of soils to be effectively dewatered, estimate rock excavation, and estimate amounts of additional suitable backfill material needed (if any) for the project. A minimum of two borings per each "bore & jack" location is required.
- It is assumed that borings will take place within the existing easement.
- If borings are to be outside of the existing easement, then permission to conduct surveying and soil borings will be obtained by the CITY. F&ME and Consultant are responsible for providing a list of properties (with Parcel number, Owner Name & Address, Deed & Plat information) to the City in order to obtain permission to access private property.
- Trenchless "bore & jack" pipe installation will be required at three (3) existing roadway crossing locations and at two (2) creek crossing locations. A minimum of two borings per each "bore & jack" location is required.
-
- Split-barrel samples will be taken at each boring. Boring will be backfilled at the end of each day and groundwater level will be monitored before backfilling. Borings within the SCDOT right-of-way will be backfilled with grout. No restoration beyond backfilling bore holes has been anticipated in this scope of work.
- The target boring depth for SPT borings will be five (5) feet below the anticipated pipe invert elevation provided by the Prime Consultant. Up to five (5) feet of rock coring will be conducted where SPT borings refuse shallower than the target depth.

- Where auger refusal occurs above the anticipated sewer depth, periodic rock core samples will be obtained to determine the Rock Quality Designation (RQD) and rock recovery ratio (REC) to define the integrity and density of the rock. Up to 5 rock core samples are included in the scope.
- Selected soil and rock samples will be tested in a laboratory to determine physical engineering characteristics. Testing will be performed under the direction of a geotechnical engineer and will include visual classification, moisture content, dry density, and Atterberg limits as appropriate. Rock core compressive strength testing may also be performed, if rock is encountered. The results of field and laboratory testing will be evaluated by a professional geotechnical engineer licensed in the State of South Carolina.
- This information will be used to design pipe bedding details, evaluate soils for potential dewatering requirements, the capability of soils to be effectively dewatered, estimate rock excavation, and estimate amounts of additional suitable backfill material needed (if any) for the project. A Geotechnical Engineering Report will be prepared based on the results of the evaluation that details the results of the testing performed. The report will include the following:
 - Computer generated boring logs with soil stratification based on visual soil classification
 - Summarized laboratory data
 - Groundwater levels observed during and after completion drilling
 - Boring location plan
 - Subsurface exploration procedures
 - Encountered soils conditions
 - Subgrade preparation/earthwork recommendations including minimum relative density requirements
 - Anticipated excavation conditions, including difficult excavation and groundwater conditions
- Sub-consultant will obtain all SCDOT and City permits required to conduct investigation on public right-of-way. CITY will obtain right of entry and investigation as required on private property.

420 Task 400 Deliverables

- Geotechnical Engineering Report

TASK 500 – Final Design

510 Roadway Coordination (City, Town, County, State, Federal)

- Consultant will contact and meet as necessary with City, County, State and Federal agencies to determine design parameters for construction of the new transmission line within the roadway rights-of-way.

- Consultant will coordinate final design with the requirements of all roadway encroachment permits

520 Utility Coordination

- Consultant will contact and meet as necessary with utility agencies that have existing utilities within the construction limits to determine design parameters, right-of-way encroachment requirements and resolve conflict issues related to the of the new transmission line adjacent to or cross existing utilities.
- Consultant will coordinate final design with the agreed upon requirements of all encroachment permits and conflict resolution solutions.

530 Project Plans and Specifications

- Consultant will prepare drawings and specifications depicting the scope, extent, and character of the materials to be provided and the work to be performed by an installation contractor. One set of contract documents will be provided to the CITY to be used to solicit bids for the construction of the project. The Contact Documents shall consist of and include the following:
 - Detailed plan and profile drawings on 24" x 36" plan sheets, 40 scale
 - Relevant features impacting construction as located by the survey.
 - Design and construction details.
 - Sediment and erosion control details.
 - Relevant environmental features.
 - Traffic control plans.
 - Existing pipe demolition/abandonment as needed
 - By-pass pumping plan as needed
 - Specifications coordinated with the CITY'S standard contract documents.
 - Special conditions related to permit requirements and easement requirements.
 - Material specifications including minimum installation requirements.
 - CITY will provide the standard contract, advertisement, general conditions, supplemental conditions, bid form, City procurement program requirements, etc. Consultant will provide the technical specifications, bid quantities, measurement and payment items and special provisions.
- Upon approval of the 100-percent submittal, Consultant will provide one set of final bid plans, a CD containing PDF's of the signed and sealed drawings, one sided copy of unbound specifications and final cost estimate in digital format to match the bid tab item list.

540 Regulatory Agency Coordination

- Consultant will contact and meet as necessary with City, County, State and Federal regulatory agencies to determine design parameters for construction of the new transmission line in accordance with regulatory requirements.

- Consultant will coordinate final design to comply with regulatory requirements.
- Potential agencies are:
 - South Carolina Department of Health and Environmental Control
 - U.S. Army Corps of Engineers – Wetlands
 - Richland County – Stormwater
 - South Carolina Department of Transportation

550 Opinion of Probable Construction Cost and Schedule

- Consultant will submit an opinion of the probable cost for the Project including construction costs, contingencies and other related items at the 60-, 90- and 100-percent plan reviews.

560 Design Reviews

- Consultant will conduct an Internal Technical Review using the Consultant's Quality Management System (QMS) program. A copy of this program will be submitted to the CITY at the beginning of the project.
- After each Internal Technical Review, Consultant will provide the CITY copies of plans and specifications for the Project for review and approval at the sixty (60%) percent and ninety (90%) completion milestones. Consultant will meet with the CITY during these milestones to discuss the project and obtain input from the Client. Following the review, Consultant will make revisions as requested by the City. Documentation of the completed reviews will be provided to the CITY by the Consultant. Following the technical reviews, Consultant will make modifications to the construction documents.
- Upon approval by the City, plans and specifications and any permits obtained will be submitted to the CITY for production during the bidding process.

570 Task 500 Deliverables

- Copy of the CONSULTANT's QA/QC Plan
- The 60% Completion Milestone Design Submittal
- The 90% Completion Milestone Design Submittal
- Opinions of Probable Construction Cost
- The 100% Design Bid Documents

TASK 600 – Permits and Property

610 Property and Right-of-Way Assistance

- Easements – Refer to Task 320 above.
- The Consultant will rely on Richland County Tax Map information in identifying property owners and will research Richland County records for property plats that have been recorded and filed with the County. The

Consultant cannot guarantee the accuracy of the County records but will revise the plats as necessary if during the legal research and easement acquisition process corrections are required to the plats.

- This scope assumes the CITY staff will obtain all necessary easements including temporary construction easements and new permanent easements utilizing the easement plats prepared by the Consultant.
- Upon CITY approval of the 60% design plans, CONSULTANT shall prepare and submit easement exhibits. Refer to task 320 above.

620 Permits

- Construction Permit: Upon CITY approval of the ninety (90%) percent completion documents, Consultant will submit copies of the project plans and specifications for final review and approval by the South Carolina Department of Health and Environmental Control (SCDHEC); work with SCDHEC and assist the CITY in efforts to obtain the necessary permits including partial and final permit to operate and/or approvals; and furnish SCDHEC with the required number of copies of plans and specifications needed for review and approval.
- Stormwater Permit: The scope assumes a Notice of Intent (NOI) Application for Stormwater Discharges from Construction Activities (sediment and erosion control permit) will be required by the City of Columbia. Upon CITY approval of the ninety (90%) percent completion drawings, Consultant will prepare a Stormwater Pollution Prevention Plan and NOI application for submittal and approval by Richland County. Consultant will provide all required submittal copies and respond to all inquiries by Richland County.
- Wetlands Permit: The CONSULTANT will prepare a Pre-Construction Notification for a NW12 Permit for proposed impacts to waters of the U.S. Included in this application will be 2 typical stream crossing details, one for temporary impacts, and one for a permanent impact. These details may be incorporated into the design. The CONSULTANT will coordinate with the regulatory agency to respond to questions and comments. The scope of work task assumes the following:
 - The proposed impacts will meet the conditions for a NW12 Permit and an Individual Permit will not be required.
 - If the NW12 Permit conditions cannot be met, additional permitting (e.g. Individual Permit) will be conducted under additional services (Task 1100).
 - Compensatory mitigation will not be required. If impacts cannot be avoided or minimized and compensatory mitigation is required, preparation of a Mitigation Plan will be conducted under additional services (Task 1100).

- The fee for the permit application will be paid through Task 650, Permit Fee Allowance.

- Roadway Encroachment Permits: This scope assumes a SCDOT Encroachment Permit will be required. Upon approval by the CITY of the ninety (90%) percent completion documents, Consultant will submit for review and approval for an Encroachment Permit by the SCDOT; work with the SCDOT and assist the CITY in efforts to obtain the necessary permits and /or approvals; and furnish the SCDOT with the required number of copies of plans and specifications needed for review and final approval.
- Railroad Permits: This scope does not include railroad encroachment permits or permits/reporting required for SRF funding. If they are required, they can be added by amendment.

650 Permit Application Fees:

The CONSULTANT will utilize this Not-to-Exceed task for direct costs associated with permit fees. No labor is included in this Task. A total of \$2,000 of permit fees are anticipated. The estimated fees for permits are as follows:

- SCDHEC Construction Permit - \$350
- Stormwater Permit and Inspection Fees - \$750
- SCDOT Encroachment Permit - \$0
- Other - \$900

This cost will cover all permit fees apart from any wetland mitigation fees. The limit as identified in the proposal is a 'not-to-exceed' value without written consent of the CITY

TASK 700 – Bidding and Award

710 Bidding Assistance

- Consultant will provide services during the bidding phase to include attending a pre-bid conference, providing technical interpretation of the bid documents, issuing addenda, assisting with responses to requests for information (RFIs), attending the bid opening.
- It is assumed that the duration of the Bid Period will be forty-five (45) days and that the CITY will be distributing the bid packages. An additional sixty (60) days is assumed from selection of the Contractor to the issuance of the Notice to Proceed.
- While a formal prequalification process is not anticipated, Consultant will work with the CITY to include qualification requirements in the Specifications that will be submitted by the bidders with the bids.

720 Award Recommendation

- Consultant will review bids received and assist CITY in evaluating the bids and recommending award of the contract.

730 Conformed Documents

- CONSULTANT will prepare Conformed Documents that incorporate Addenda items. The Conformed Documents will be used for construction. The CONSULTANT will provide the City and Contractor each (3) hard copy sets and (1) digital set (in Adobe PDF format) of the Conformed Documents.

740 Task 700 Deliverables

- Pre-bid Conference Agenda
- Addenda
- Award Recommendation Letter
- Conformed Documents

TASK 800 – Engineering Services During Construction *(Not Included at this time. The agreement may be amended at a later date to include this service)*

TASK 900 – Full Time Construction Inspection (Not Applicable)

TASK 1000 – Project Closeout *(Not Included at this time. The agreement may be amended at a later date to include this service)*

TASK 1100 – Additional Services

1110 General Task

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

- Additional gravity sewer replacement above the 13,400 linear feet identified in the project description.
- Additional Surveying outside original scope or for Record Drawings.
- Flood Study or Flood Impact Analysis
- Additional meetings with homeowners and agencies beyond those scheduled in the agreement.
- Additional property research and easement exhibits, other than outlined herein.

For services rendered under Task 1100 - Additional Services, compensation to the Consultant shall be negotiated with the CITY. An allowance is provided in this proposal to cover additional services. No additional services will be performed without written approval from the CITY.

ATTACHMENT A TO EXHIBIT A

RESPONSIBILITIES OF THE OWNER

The responsibilities of the CITY as described in Exhibit A are amended and supplemented as described below.

The CITY agrees to perform the following:

- Provide assistance in gaining access to all sewers and sewer easements for which field services will be provided.
- Notify Consultant of property owners who may pose problems with Consultant's ability to safely gain access to manholes and assist the Engineer with gaining safe access.
- For manholes and sewer line that may be surrounded by water of depth over 8" or require access to the right-of-way through water, assist Consultant by providing use of the City's amphibious, all terrain, off-road vehicle (Argo).
- Provide access to locked manholes.
- Respond to requests for information and review deliverables in a timely manner.
- Reimburse all permitting and other local fees that may arise from the work completed as part of this Agreement.
- Provide independent quality assurance testing required by the specifications or deemed reasonable by Consultant and CITY.
- Provide available data as requested in the agreement.

**EXHIBIT B
COMPENSATION**

City of Columbia CIP # SS7474 North Richland Crane Creek and Upper North Branch Sewer Improvements Phase 1

Compensation for services provided under Tasks 100 through 1100 as outlined in Exhibit A, Scope of Services, is estimated to be a total of \$450,505 including Owner controlled contingency of \$40,955. All tasks in this phase of the project will be billed on a Lump Sum basis. An estimated breakdown of the fee is shown in the following table:

Tasks	Description	LS/ Hours	Consultant	Protégé (Name)	Sub Consultant (Name)	Total
100	Evaluation and Design Phase Project Management and Administration	LS	\$42,000	\$40,000 (Case Consulting)		\$82,000
200	Preliminary Planning, Investigation, Engineering and Alternative Analysis	LS	\$41,350			\$41,350
300	Survey and Utility Mapping	LS	\$26,400	\$22,000 (Case Consulting using Steadman & Assoc.)		\$48,400
400	Geotechnical Investigation	LS	\$8,350		\$48,350 (F&ME)	\$56,700
500	Final Design	LS	\$129,250			\$129,250
600	Permits and Property	LS	\$30,850			\$30,850
650	Permits and Property NTE Fees	LS	2,000			\$2,000
700	Bidding and Award	LS	\$19,000			\$19,000
	Project Sub-Totals		\$299,200	\$62,000	\$48,350	\$409,550
1100	Client Controlled Contingency (10%)	LS	\$29,920	\$6,200	\$4,835	\$40,955
	Total of Contract		\$329,120	\$68,200	\$53,185	\$450,505
	% of Contract to Protégé			15.14%		

The Consultant will meet the MPP goal of 20%Protégé Participation, once the project contract is amended to include Construction Phase Services.

City of Columbia
SS7474 - Upper North Branch & North Richland Crane Creek Sewer Improvements - Phase 1
Initial Project Schedule

Michael Baker International
 Sewer Improvements SS7474
 Exhibit C
 Page 1 of 2

ID	Task Name	Duration	Start	Finish	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1	Task 100 - Evaluation and Design Phase Administration	915 days	Mon 4/1/19	Fri 10/1/21												
2	Task 110 - General Project Administration (Kickoff to Award)	915 days	Mon 4/1/19	Fri 10/1/21												
3	Task 120 - Coordination Meetings (Design to Award)	365 days	Mon 4/1/19	Mon 3/30/20												
4	Task 130 - Project Management & Coordination with the CITY (Kickoff to Award)	915 days	Mon 4/1/19	Fri 10/1/21												
5	Task 140 - Public Outreach	320 days	Mon 4/1/19	Fri 2/14/20												
6	Task 150 - Mentor-Protégé Program	915 days	Mon 4/1/19	Fri 10/1/21												
7	Task 200 - Preliminary Planning, Investigation, Engineering and Alternative Analysis	121 days	Mon 4/1/19	Tue 7/30/19												
8	Task 210 - General Data Collection, Field Recon and Coordination	90 days	Mon 4/1/19	Sat 6/29/19												
9	Task 220 - Alternative Analysis and Route Selection	40 days	Wed 5/1/19	Sun 6/9/19												
10	Task 230 - Preliminary Agency Coordination and Meetings	14 days	Sat 6/1/19	Fri 6/14/19												
11	Task 240 - Preliminary Utility Coordination and Meetings	14 days	Sat 6/1/19	Fri 6/14/19												
12	Task 250 - Design Criteria	10 days	Sat 6/1/19	Mon 6/10/19												
13	Task 260 - Opinion of Probable Construction Cost and Schedule	10 days	Sat 6/1/19	Mon 6/10/19												
14	Task 270 - Preliminary Design Reviews	10 days	Sat 6/15/19	Mon 6/24/19												
15	Draft PER for Review by City	10 days	Sat 6/15/19	Mon 6/24/19												
16	Task 280 - Preliminary Alternative Analysis and Engineering Report	36 days	Tue 6/25/19	Tue 7/30/19												
17	Review, Revise, Resubmit Final PER	24 days	Tue 6/25/19	Thu 7/18/19												
18	Task 285 - City review of PER	10 days	Sun 7/21/19	Tue 7/30/19												
19	TASK 300 – Survey and Utility Mapping	408 days	Mon 4/15/19	Tue 5/26/20												
20	Task 310 - Wetland Survey	15 days	Mon 4/13/20	Mon 4/27/20												
21	Task 320 - Field Survey	400 days	Mon 4/15/19	Mon 5/18/20												

City of Columbia
SS7474 - Upper North Branch & North Richland Crane Creek Sewer Improvements - Phase 1
Initial Project Schedule

Michael Baker International
 Sewer Improvements SS7474
 Exhibit C
 Page 2 of 2

ID	Task Name	Duration	Start	Finish	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
22	Survey Access Solicitations	400 days	Mon 4/15/19	Mon 5/18/20												
23	Field Survey	15 days	Mon 4/13/20	Mon 4/27/20												
24	Task 330 - Property Research and Easement Exhibits	30 days	Mon 4/27/20	Tue 5/26/20												
25	Task 340 - Utility Mapping	20 days	Mon 4/27/20	Sun 5/17/20												
26	Task 400 - Geotechnical Investigation	15 days	Mon 4/13/20	Mon 4/27/20												
27	Task 410 - Field Investigation	15 days	Mon 4/13/20	Mon 4/27/20												
28	Task 500 - Final Design	440 days	Mon 5/18/20	Sat 7/31/21												
29	Task 510 - Roadway Coordination (City, State)	14 days	Mon 5/18/20	Sun 5/31/20												
30	Task 520 - Utility Coordination	14 days	Mon 5/18/20	Sun 5/31/20												
31	Task 530 - Project Plans & Specifications	90 days	Mon 5/18/20	Sat 8/15/20												
32	Task 540 - Regulatory Agency Coordination	60 days	Mon 6/15/20	Thu 8/13/20												
33	Task 550 - Opinion of Probable Construction Cost and Schedule	14 days	Wed 7/15/20	Tue 7/28/20												
34	Task 560 - Design Reviews	407 days	Sat 6/20/20	Sat 7/31/21												
35	60% Design Review	14 days	Sat 6/20/20	Fri 7/3/20												
36	90% Design Review	14 days	Wed 7/15/20	Tue 7/28/20												
37	100% plan and specification submittal to Cit	1 day	Sun 8/1/21	Sun 8/1/21												
38	Task 600 - Permits & Property	407 days	Sat 6/20/20	Sat 7/31/21												
39	Task 610 - Property and Right-of-Way Assistan	407 days	Sat 6/20/20	Sat 7/31/21												
40	Community Outreach/Public Meeting	10 days	Sat 6/20/20	Mon 6/29/20												
41	Easement Acquisition	365 days	Thu 7/30/20	Thu 7/29/21												
42	Task 620 - Permits (See Task 550 - target submittal for all permits 12/15/16 - 60 day review)	180 days	Mon 2/1/21	Fri 7/30/21												
43	Task 700 - Bidding & Award	64 days	Fri 7/30/21	Fri 10/1/21												
44	Task 710 - Bidding Assistance	28 days	Fri 7/30/21	Thu 8/26/21												
45	Task 720 - Award Recommendation	16 days	Wed 9/1/21	Thu 9/16/21												
46	Notice To Proceed	1 day	Fri 10/1/21	Fri 10/1/21												
47	Task 1100 - Additional Services	915 days	Mon 4/1/19	Fri 10/1/21												
48	Task 1110 - General Task (As needed)	915 days	Mon 4/1/19	Fri 10/1/21												

Exhibit D

City of Columbia North Richland Crane Creek and Upper North Branch Sewer Improvements Phase 1

SUBCONSULTANT FIRM INFORMATION RECORDS

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

Firm Name and Address	Contact Name and Telephone #	Group/Classification (MBE, WBE, SBE, Non MBE/WBE/SBE) Select ONE	Services to be Provided	Dollar Value of Services*
Case Consulting Inc 840 Shull Street, Ste 210 West Columbia, SC 29169	Calvin Wise 803-926-1600	MBE	Evaluation & Design Phase Project Administration and Surveying	\$68,200
F&ME Consultants, Inc 3112 Devine Street, Columbia, SC 29205	Andy Whitfield 803-254-4540	NON- MBE/WBE/SBE	Geo Technical	\$53,185
		Choose an item.		
		Choose an item.		
		Choose an item.		
		Choose an item.		

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



CITY OF COLUMBIA

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

MENTOR PROTÉGÉ PROGRAM Implementation Plan

Date: 2/28/19 Project Number: SS7474
Mentor: Michael Baker International, Inc. Project Name: Up N Branch & N Richland
Protégé: CASE Consulting, Inc. Duration of the Project: 30 Months
Project Contract Amount: \$450,505.00 Protégé Amount: \$68,200.00

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

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

MBI & CASE Consulting have a long working relationship on Columbia Water & Sewer projects. The role of CASE Consulting for this project is to provide general project controls and administration for the duration of the project as well as detailed construction administration and inspection once the project reaches that phase. The role for this phase of the project will entail scheduling and holding project meetings, monitoring and adjusting schedule, maintaining all project controls within the SharePoint site, and managing the survey sub-consultant through CASE Consulting.

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

CASE Consulting is endeavoring to add progressive responsibilities with each project they partner on with MBI. This project scope includes more project control responsibility as well as includes the addition of CASE hiring a sub-consultant, Steadman & Associates, for the purpose of surveying. CASE plans to expand their detailed approach to project documentation to the total project, versus historically only during the construction phase. Additionally, CASE will be sub-contracting the survey contractor to better learn the sub-consulting process.

3. How will the team focus on developing protégé's business and implementing the actions necessary to obtain results reflected in the Mentor-Protégé Agreement? *Identify milestones, thresholds, or other indicators team that would indicate success is being achieved.*

By expanding CASE Consulting's knowledge of the design and total project administration phase, the MBI/CASE partnership will continue to look for opportunities to grow the responsibility of the Protege on future projects. A milestone for this project would be CASE meeting the obligations of the planned 15% responsibility for this phase of the proposed project.



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

Mentor:

Kyle Crager, P.E. - Project Manager, Greg Hodges, P.E., Angie Logan, Project Administrator

Protégé:

Calvin Wise - Project Administration

Subcontractors:

F&ME - Geotechnical; Steadman & Associates, Inc., Survey, subcontracted through CASE Consulting

Special Arrangements:

CASE Consulting will subcontract the surveyor but still self perform greater than 50% of the scope of this phase.

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

a. Description of Mentor's responsibilities:

Supervision of the protege, review of the project reports, follow up as needed. Provide training in project management. Provide legal training for contractual responsibilities associated with using sub-consultants.

b. Description of Protégé's responsibilities on project:

Project controls, meetings, scheduling, Sharepoint reporting, surveying (through the use of Steadman & Assoc.)

c. Description of responsibilities that will be completed as a team:

Project administration from inception to completion, scoping survey effort, invoicing, scheduling, overseeing sub-consultants.

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

Task 100 to Task 700 (Inception to Bid) is anticipated to last 30 months. The protege will be utilized during this entire phase.



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

By reviewing goals and requirements monthly associated with project thresholds and invoicing. MBI & CASE Consulting have a longstanding track record with complying with the rules and intent of the program.

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

Due to the fact that construction administration and observation is not being requested by the City at this time, the proposed Protege scope is only 15.14% of the total contract. This includes CASE consulting procuring and managing the survey sub-consultant, Steadman & Associates, through their company during this phase. Once this project is amended to include the construction phase, the 20% protege goal will be met or exceeded.

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

Weekly update meetings during the entire project phase as well as quarterly mentoring meetings to discuss overall performance and opportunities for protégé growth.

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

Through the standard MBI sub-consultant agreement. Terms will be pay when paid by client.



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

Subcontractor's Name	Telephone	Address	Who will they report to?	Contract Amount	MPP, MBE, WBE, SBE	Percentage of Contract
F&ME Consultants, Inc.	803-254-4540	3112 Devine St, Columbia, SC 29205	MBI	\$53,185		11.8
Steadman & Associates	803-799-4500	PO Box 61031 Columbia, SC 29661	CASE Consulting	\$22,000		4.9

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

Protégé Contract Value: <u>\$68,200.00</u>
Percentage of Contract: <u>15.14%</u> (Minimum of 20% of total contract amount is required)

MBI is intending to fully meet the 20% MPP requirement once the construction administrative service is authorized by the City.



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MENTOR-PROTEGE IMPLEMENTATION PLAN SIGNATURE SHEET

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

EXECUTED by Michael Baker Intl. (Mentor Firm) this 27th day of February, 2019.
Corporate SEAL

By: [Signature]
Title: Vice President

ATTEST: [Signature]
By: [Signature]
Title: Project Manager

EXECUTED by CasE Consulting (Protégé Firm) this 27th day of February, 2019.
Corporate SEAL

By: [Signature]
Title: PRESIDENT

ATTEST: [Signature]
By: [Signature]
Title: Office Services Manager

RECOMMENDED FOR APPROVAL:

EXECUTED by the Department of Utilities & Engineering, Compliance Division on this 8
day of march, 2019.

By: [Signature]
Title: Compliance Administrator

Michael Baker International
Sewer Improvements SS7474
Exhibit G

**PROMPT PAYMENT AFFIDAVIT
EXHIBIT G**

Contractor will place a check in the appropriate box below that applies to this payment request.

Re: Payment Request No. _____

I, _____ (Name), the _____ (Title - e.g., President, Vice President, etc.) of _____ ("Company"), do state the following with regard to payments made under Contract No. _____ ("Contract"):

1. ____ Subcontractors, at the first tier, both DBE and non-DBE, who completed work and were listed for payment on the prior Payment Request No. _____, were paid no later than twenty (20) calendar days after Company received payment from the City.

2. ____ Copies of invoices and cancelled checks for subcontractors at the first tier who were paid under the prior payment request have been delivered or mailed to the Construction Management Division. In addition, Company has attached to the current Payment Request all lien waivers for prior subcontractor payments and any other documentation required by the City. (Failure to attach all required documentation to the Payment Request or forward cancelled checks and invoices to the City's Construction Management Division may cause the Payment Request to be rejected by City.)

3. ____ All retainage amounts withheld from any subcontractor who satisfactorily completed its portion of the contract work, including punch list items, were paid to the subcontractor(s) no later than fourteen (14) calendar days after it satisfactorily completed its work, whether or not City has paid said retainage amounts to Contractor. Attach a copy of the cancelled check evidencing payment of each retainage amount.

4. ____ There was no delay in or postponement of any payment owed to a subcontractor, whether periodic payment or retainage amount, except for good cause and after receipt of prior written approval from the Assistant City Engineer for Construction.

Attach a copy of the written approval from the City of Columbia.

Company Name

Signature

Michael Baker International
Sewer Improvements SS7474
Exhibit G

Print Name

Date: _____

Subscribed and sworn to before me this ____ day of _____ 20__.

Notary Public

**INVOICING PROCEDURES
EXHIBIT H**

1. The City's Project Manager or his/her designee must review all invoices prior to payment.
2. The Engineer's invoice must contain sufficient detail by task and resource and should be easily traceable to the work completed on the project schedule. Descriptions used in the project schedule shall match those descriptions contained in the Engineer's invoice.
3. The work completed on the Engineer's project schedule must be the basis for full or percentage of completion payment on the Engineer's invoice.
4. The Engineer will not request payment for taxes on Professional Services, labor or installation fees.
5. The Engineer will not invoice, or request payment for any equipment or services that may be specified in this Agreement prior to the delivery of said equipment or performance of said services.
6. The Engineer shall adhere to an agreed-upon delivery schedule for equipment and/or services. This is to ensure that the City does not have to pay for the advanced delivery of equipment that it was not expecting in that timeframe and/or have to warehouse or make space for unanticipated equipment deliveries. Exceptions to this requirement must be approved by the City in writing.
7. All invoices shall include a valid Purchase Order number on the bill; if emergency purchases are required for any reason before a purchase order number is available, a copy of the emergency request for purchase should accompany the Engineer's invoice.
8. The Engineer shall name a representative that will be responsible for reviewing all invoicing concerns that the City may have concerning this project.

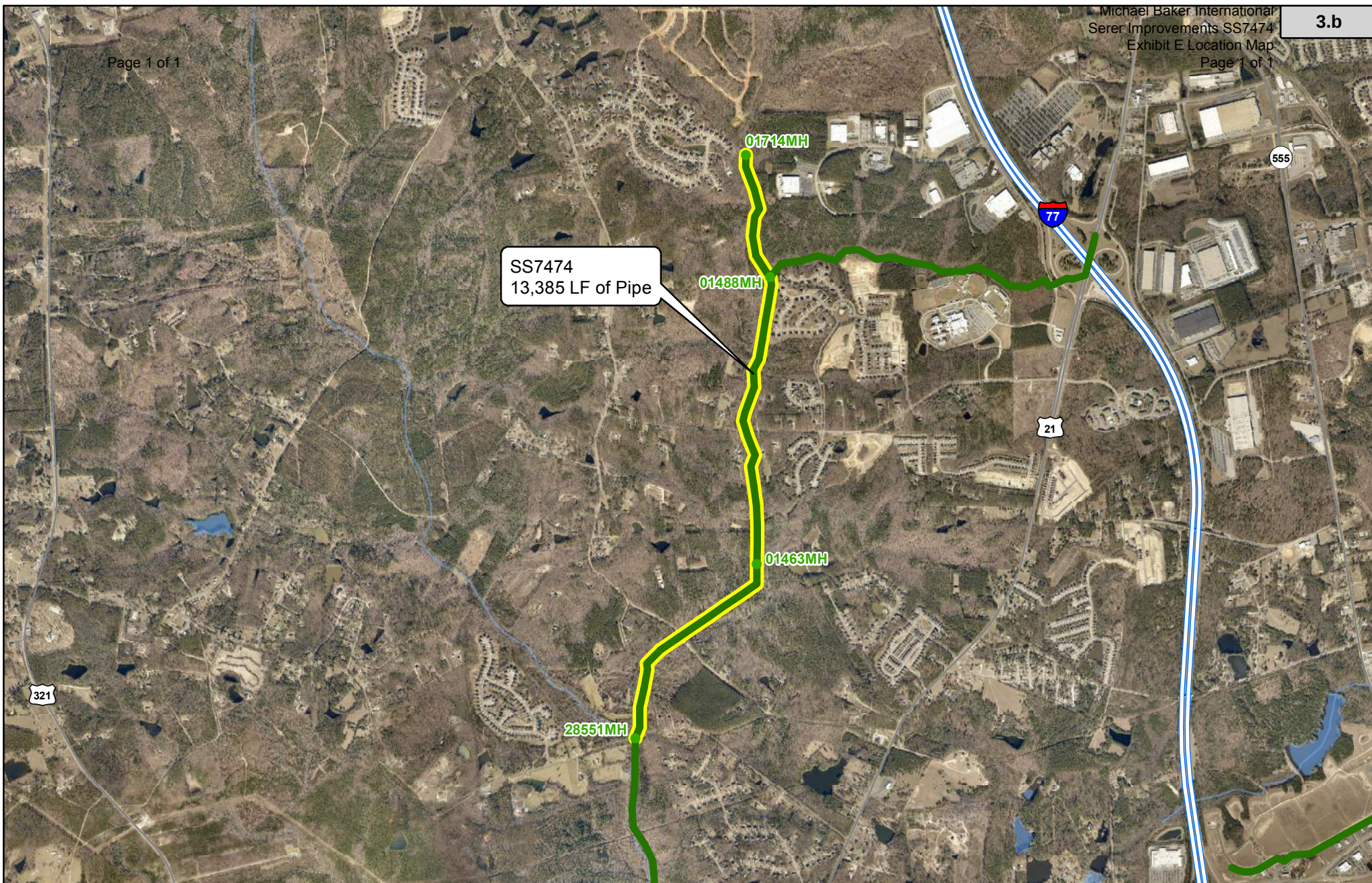
9. The Engineer shall submit receipts for all actual expenses.
10. Travel expenses including airfare and car rental shall be invoiced at cost, without markup and with approved documentation (Note: This section does not apply to travel within the Columbia region for work being performed for the Agreement but only pertains to travel to and from Columbia if necessary to fulfill the terms of the Agreement.).
11. Lodging shall be invoiced up to the per diem rate according to the GSA rates established at www.gsa.gov, based on the date of travel.
12. Field documents and other equipment/supplies shall be invoiced at cost only; no markup allowed and with approved documentation, and
13. Other required non-labor expenses as may be applicable to the project and pre-approved by the City shall be invoiced at cost only; no markup allowed and with approved documentation.
14. Each invoice/payment request shall identify the percentage and dollar amount that will be paid to the subcontractor and/or vendor for work performed and materials/products furnished. If required, the Engineer shall submit supporting documentation as required by the designated point of contact to support the amount being invoiced.
15. The Engineer shall provide the names of the subcontractors and/or vendors and a description of the work performed in the invoice/request for payment. The Engineer shall also provide a breakdown of the supplies and materials being billed by each subcontractor and/or vendor and the dollar amount to be reimbursed by the City.

Failure of the Engineer to follow these invoice requirements will result in the delay of payment of the invoices.

N. Prompt Payment to Subcontractors and Material Suppliers – Exhibit F

Michael Baker International
Sewer Improvements SS7474
Exhibit H

1. The Engineer is required to pay all Subcontractors and material suppliers for all work that the Subcontractor has satisfactorily completed, no later than twenty (20) calendar days after the Engineer has received payment from the City.
2. In addition, all Retainage amounts received from the City by the Engineer must be paid by the Engineer to the Subcontractor no later than fourteen (14) calendar days after the Subcontractor has, in the opinion of the Assistant City Engineer for Construction or his/her designee, satisfactorily completed its portion of the Work.
3. A delay in or postponement of payment to the Subcontractor or material supplier requires good cause and prior written approval of the Assistant City Engineer for Construction or his/her designee.
4. The Engineer is required to include, in each subcontract, a clause requiring the use of appropriate arbitration mechanisms or other method to resolve all payment disputes.
5. The City will not pay the Engineer for work performed unless and until the Engineer ensures that the Subcontractors have been promptly paid for the work they have performed under all previous payment requests, as evidenced by the filing with the City lien waivers, canceled checks (if requested), and the Engineer's sworn statement that it has complied with the prompt payment requirements. The Engineer must submit a Prompt Payment Affidavit, Subcontractor list which identifies each Subcontractor (both DBE and non-DBE) with their contract values and the date and amount of the last payment to such Subcontractor(s), with every payment request filed with the City, except for the first payment request, on every Agreement with the City.
6. Failure to comply with these prompt payment requirements is a breach of this Agreement. The City reserves the right to pursue any and all remedies permitted under law for breach of contract, including, but not limited to, Engineer debarment.



Clean Water 2020
Columbia's One Vision for Clean Water



We Are Columbia

PCR,PIA: 7/17/2018
Production Maps\ProjectLocation Maps\CIP\SS7474

- Starting and Ending Sewer Manholes
- SS7474
- Major Gravity Mains ($\geq 15"$)



1 inch = 0.5 miles

0 0.5 Miles

SS7474
Upper North Branch
Sewer Improvement
Phase I

Prepared For:

Packet Pg. 76



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Procurement and Contracts

FROM: Sandra Wright, Purchasing Agent

SUBJECT: Council is asked to approve Construction Change Order# 1 for Project SS7363; Smith Branch 03 Sewer Rehabilitation Implementation, as requested by Columbia Water. Award to North American Pipeline Management, Inc. in the amount of \$1,620,988.00. This firm is located in Marietta, GA.

PURPOSE: This is a Clean Water 2020 Program Project.

The original contract has subcontractor LA Barrier and Son of Lexington, SC, a Minority Business Enterprise (Woman) providing trucking and aggregate materials at 12% (\$692,000) of the contract value. The CDBE goal for this project was established at 26%. The vendor has maintained the goal at 12.7% with good faith efforts for this change order.

REQUISITION NO.: R192219

FUNDING SOURCE & ORIGINAL BUDGET: Funding Source: 5529999-SS736301-658650. The previous awarded amount, including a \$250,000.00 contingency is \$6,205,713.00. With approval of this Construction Change Order increase of \$1,620,988.00, the revised awarded contract amount will be \$7,826,701.00. The original budgeted amount for this project is \$7,000,000. The original budget amount for this change order is \$1,620,988.00.

BUSINESS PROGRAM: Female Business Enterprise

CLEAN WATER 2020?: Yes

FOCUS AREAS: Innovative & High Quality Municipal Services

Additional funding is respectfully requested in the amount of \$1,620,988.00 to fulfill the balance of the subject construction change order.

Services to be performed are within Council Districts 1 and 2.

ATTACHMENTS:

- **#a:** SS7363 Smith Branch 03 Sewer Rehab CO# 1 (PDF)
- **#d:** SS7363 Map (PDF)



SS7363
Smith Branch 03 Sewer Rehabilitation
Change Order # 1
April 11, 2019

Description of Change: A modification of the Contract Agreement between the City of Columbia (City) and North American Pipeline Management, Inc. (Contractor) is requested in order to correct quantity errors in the original bid process and to facilitate the tracking of various construction materials and construction activities. All other provisions of the Agreement, except as herein modified or changed remain in full force and effect.

Reason for change: This change order is to clarify methods of quantity measurement and tracking of line items, in the processing of payment applications for this project. A detailed narrative explaining these modifications is attached.

Based on these clarifications, the following existing quantities would be removed from the contract per the following table.

DEDUCTIONS

Item	Description	Original Qty.	Orig. Cost
A-12	Remove & Replace Asphalt Paving in City and County Streets	13,695SY	\$314,985.00
A-13	Remove & Replace Asphalt Paving in DOT Streets	53SY	\$20,246.00
B-1	8-inch PVC Sewer Pipe (0 to 6' Deep) in City Streets	1,398LF	\$139,800.00
B-2	8-inch PVC Sewer Pipe (6 to 8' Deep) in City Streets	1,514LF	\$166,540.00
B-3	8-inch PVC Sewer Pipe (8 to 10' Deep) in City Streets	1,069LF	\$128,280.00
B-4	8-inch PVC Sewer Pipe (10 to 12' Deep) in City Streets	396LF	\$59,400.00
B-6	12-inch PVC Sewer Pipe (6 to 8' Deep) in City Streets	28LF	\$8,988.00
B-28	8-inch PVC Sewer Pipe (10 to 12' Deep) in DOT Streets	297LF	\$115,533.00
B-49	6-inch PVC Service Connections and Cleanouts in City Streets	725LF	\$47,850.00
C-1	8-inch DI Restrained Joint Gravity Sewer pipe (greater than 0 to 8') in City St.	72LF	\$12,240.00
C-7	12-inch DI Gravity Sewer Encasement for 8" PVC Conduit in City St.	380LF	\$71,060.00
C-13	18-inch DIP Gravity Sewer Encasement for 12" PVC Conduit in City St.	80LF	\$21,120.00

TOTAL DEDUCTIONS (\$1,106,042.00)

ADDITIONS

The following table illustrates new items needing to be included in the project. NAPM has provided unit pricing for each based on the quantity and description modifications as outlined in this letter.

Description	Quantity	Unit	Unit Price	Extended Price
Mill & Resurface Asphalt Pavement	9,848	SY	\$43.50	\$428,388.00
Replace Asphalt Pavement	3,900	SY	\$112.00	\$436,800.00
Flowable Fill	6,500	CY	\$159.00	\$1,033,500.00
8-inch PVC Sewer Pipe (0 to 6' Deep) Beneath Streets	807	LF	\$136.00	\$109,752.00
8-inch PVC Sewer Pipe (6 to 8' Deep) Beneath Streets	874	LF	\$160.00	\$139,840.00
8-inch PVC Sewer Pipe (8 to 10' Deep) Beneath Streets	617	LF	\$188.00	\$115,996.00
8-inch PVC Sewer Pipe (10 to 12' Deep) Beneath Streets	400	LF	\$237.00	\$94,800.00
12-inch PVC Sewer Pipe (6 to 8' Deep) Beneath Streets	14	LF	\$269.00	\$3,766.00
6-inch PVC Service Connections and Cleanouts Beneath Streets	725	LF	\$54.00	\$39,150.00
8-inch PVC Sewer Pipe (0 to 6' Deep) Outside Pavement	591	LF	\$136.00	\$80,376.00
8-inch PVC Sewer Pipe (6 to 8' Deep) Outside Pavement	640	LF	\$143.00	\$91,520.00
8-inch PVC Sewer Pipe (8 to 10' Deep) Outside Pavement	452	LF	\$152.00	\$68,704.00
8-inch PVC Sewer Pipe (10 to 12' Deep) Outside Pavement	293	LF	\$178.00	\$52,154.00
12-inch PVC Sewer Pipe (6 to 8' Deep) Outside Pavement	14	LF	\$254.00	\$3,556.00
8-inch Ductile Iron Sewer Pipe (All Depths) Beneath Streets	266	LF	\$54.00	\$14,364.00
8-inch Ductile Iron Sewer Pipe (All Depths) Outside Pavement	266	LF	\$54.00	\$14,364.00

TOTAL ADDITIONS:

\$ 2,727,030.00

Total Net Change: Addition \$ 1,620,988.00

New funding requirement \$ 1,620,988.00

Budget transfer attached

Proposed Change and Basis for Payment:

Owner's Contingency Allowance

Original Allowance Total:	\$250,000.00
Previous change orders:	\$0.00
This change (Addition):	\$0.00
Revised Owner's Contingency Allowance:	\$250,000.00

Proposed Change and Basis for Payment

Original contract price:	\$5,955,713.00
Previous change orders:	\$0.00
This change: (Addition)	\$1,620,988.00
Revised contract price:	\$7,576,701.00

Contractual Completion Date:

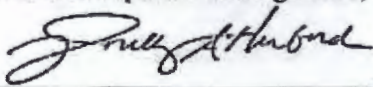
Notice to Proceed: January 22, 2019

Scheduled Final Completion Date: March 18, 2020

Revised Completion Date: April 15, 2020

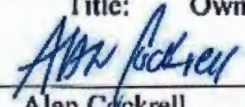
This Change is Acceptable:

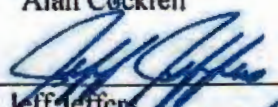
North American Pipeline Management, Inc.

By: 

Dorelly A. Herford

Title: Owner

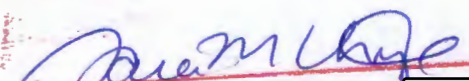
Recommended for Approval:  Utility Construction Inspector
Alan Cockrell

Recommended for Approval:  Sr. Utility Construction Inspector
Jeff Jeffers

Recommend for Approval:  Asst. City Engineer for Engineer Const.
Michael F. Sheu, P.E.

Approval of Change: _____ City Manager
Teresa Wilson

APPROVED AS TO FORM


Legal Department City of Columbia



AECOM
101 Research Drive
Columbia, SC 29203
aecom.com

Project name:
SS7363 Smith Branch 03 Sewer Rehabilitation
Implementation

Project ref:
60508541

From:
Phillip Dieckmann, P.E.

Date:
May 16, 2019

To:
Michael F. Sheu, P.E.
Assistant City Engineer
City of Columbia
PO Box 147
Columbia, SC 29217

CC:
Lauren Carper, P.E. - CW2020
John T. Riggs, P.E. - COC
Tom Haselden, P.E. - AECOM

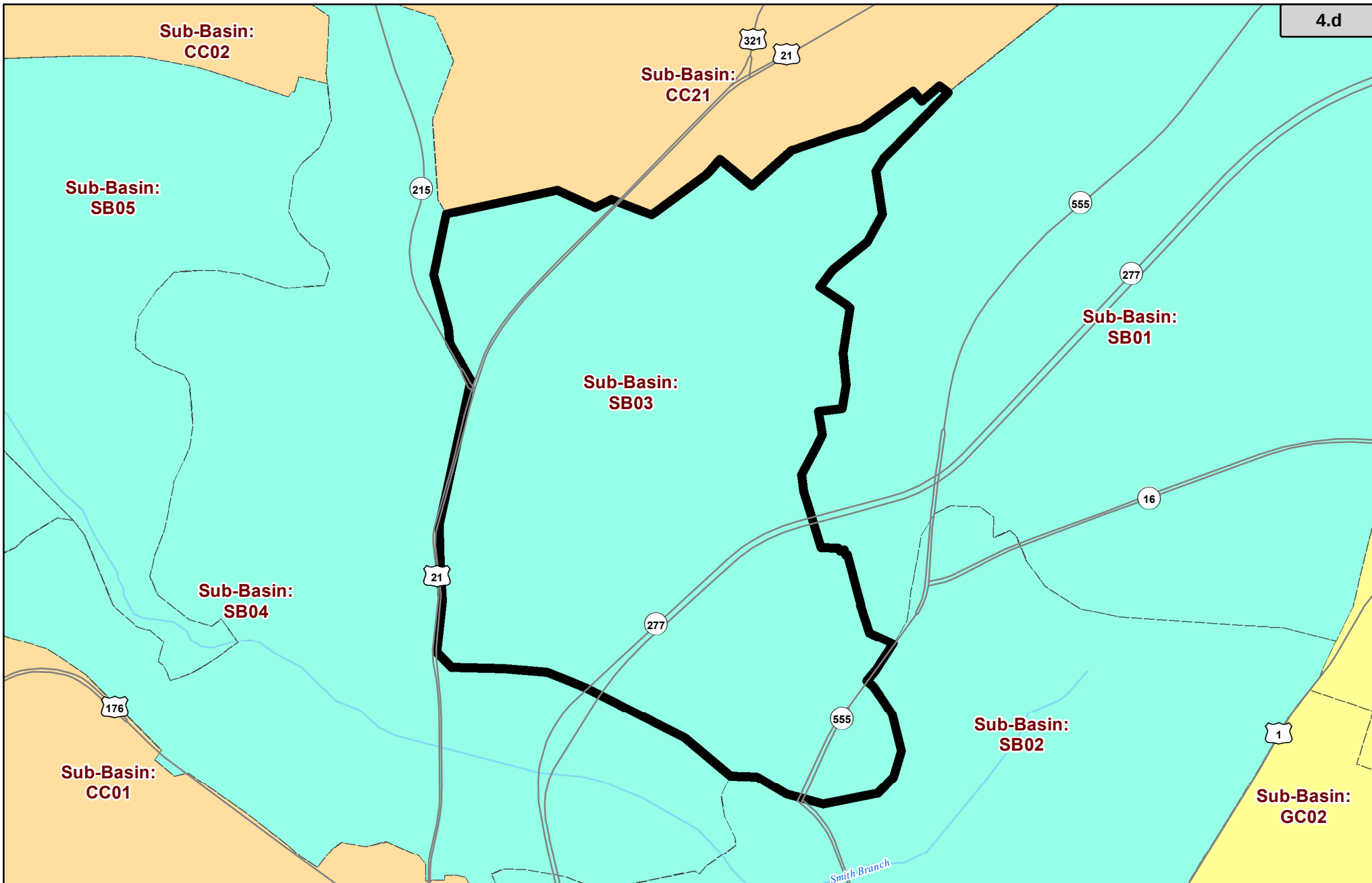
Memo

Subject: SS7363 Smith Branch 03 SSES -- Change Order #1

AECOM Technical Services, Inc. (AECOM) has reviewed the SS7363 Smith Branch 03 SSES -- Change Order #1. AECOM agrees with the proposed changes in quantities, the revised Measurement and Payment specification sections, and revised pricing as detailed in Change Order #1. AECOM performed an independent evaluation of the construction pricing provided by North American Pipe Management, Inc. and finds pricing provided in Change Order #1 be fair and reasonable for the work to be performed.

Sincerely,

Phillip Dieckmann, P.E.



4.d

Clean Water 2020
Columbia's Clear Vision for Clean Water



We Are Columbia

- Crane Creek
- Gills Creek
- Smith Branch



1 inch = 1,500 feet

0 375 750 1,500 2,250
Feet

SS7363 Smith Branch 03

Prepared For: **Packet Pg. 83**



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-044 Granting an encroachment to The Grand for installation and maintenance of twelve (12) tables with umbrellas and forty-eight (48) chairs within the tree zone and sidewalk right of way areas of the 1600 block of Main Street adjacent to 1621 Main Street for use by its patrons for outdoor dining during normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00 a.m. on Sunday

PURPOSE: First reading approval was given on June 4, 2019.

FUNDING SOURCE & ORIGINAL BUDGET:

FOCUS AREAS: Attracting & Retaining Talent, Connecting Our Community, Economic Prosperity - Endless Possibilities, Empowering Our Residents, Enhancing Columbia's Neighborhoods

ATTACHMENTS:

- **#a:** 2019-044 encroach The Grand 1621 Main outdoor dining (PDF)

HISTORY:

06/04/19

Columbia City Council

APPROVED ON FIRST READING.

ORDINANCE NO.: 2019-044

Granting an encroachment to The Grand for installation and maintenance of twelve (12) tables with umbrellas and forty-eight (48) chairs within the tree zone and sidewalk right of way areas of the 1600 block of Main Street adjacent to 1621 Main Street for use by its patrons for outdoor dining during normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00a a.m. on Sunday

WHEREAS, The Grand hereinafter "Grantee") located 1621 Main Street, Richland County TMS #09014-10-12, desires to utilize a portion of the tree zone and sidewalk right of way area of the 1600 block of Main Street adjacent to its building at 1621 Main Street for installation and maintenance of twelve (12) tables with umbrellas and forty-eight (48) chairs within the tree zone and sidewalk right of way areas of the 1600 block of Main Street adjacent to 1621 Main Street as shown on the attached drawing for use by its patrons for outdoor dining during normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00 a.m. on Sunday; and,

WHEREAS, the tables and chairs shall be placed adjacent to the building to prohibit obstruction of pedestrian movement and vehicle parking and shall be removed and stored inside the building when not in use; the outdoor dining area and general exterior of the building shall be kept clean and orderly at all times; other improvements, interference with pedestrian movement or the parking lane and disturbance of existing trees and roots shall be prohibited; and,

WHEREAS, it appears that the encroachment will not interfere with the use of the sidewalk or street for traffic, utility locations or other uses within the foreseeable future; NOW, THEREFORE,

BE IT ORDAINED by the Mayor and City Council of the City of Columbia, South Carolina, this ____ day of _____, 2019, that Grantee is hereby granted the right to utilize a portion of the sidewalk right of way area of the 1600 block of Main Street adjacent to its business at 1621 Main Street for placement and maintenance of twelve (12) tables with umbrellas and forty-eight (48) chairs within the tree zone and sidewalk right of way areas of the 1600 block of Main Street adjacent to 1621 Main Street for use by its patrons for outdoor dining during normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00 a.m. on Sunday, as shown on the attached drawing.

ALL WORK SHALL COMPLY with the requirements of The City of Columbia and South Carolina Department of Transportation now in existence or hereafter enacted. The materials and type of finish to be used are to be approved by the City Engineer prior to installation. Any damage to the street or sidewalk caused by construction or maintenance shall be repaired to the satisfaction of the City Manager. Improvements constructed within the encroachment by or on behalf of Grantee shall be maintained by the Grantee at no cost to the City in a manner approved by the City Manager.

PROVIDED, HOWEVER, that in exercising the privileges granted under this ordinance, Grantee, will indemnify and save harmless the City from any and all claims or causes of action which may arise by reason of the construction or maintenance of the aforesaid encroachment.

PROVIDED FURTHER that the privilege granted hereby is subject to the Grantee complying with the following conditions, restrictions or limitations:

1. No item shall be placed that creates a visual impediment to persons safely entering or exiting the building, adjoining driveway, parking spaces or walking along the sidewalk. The City reserves the right to remove any item located within the right of way which it deems to be a safety hazard; and,
2. To prohibit the business from overcrowding, the posted capacity allowed within the business at the time of enactment of the encroachment ordinance shall include the total number of patron seating approved for the encroachment area, if not already included in the posted capacity allowable, so that patrons relocating from the inside of the business to the outside, or from the outside of the business to the inside shall not cause the posted capacity to be exceeded; and,
3. Use of the encroachment area is strictly limited to the serving of food and/or beverages to the patrons of the business during the normal business hours reflected in the encroachment ordinance at the time of enactment of the encroachment ordinance; and,
4. Any changes to the name or ownership of the business or property, hours for use of the encroachment area, items allowed within the encroachment area or allowable patron capacity shall require an amendment to the encroachment ordinance; and,
5. The location of the tables and chairs shall not impede the path of travel for the assigned exit discharge of the adjoining buildings or parking spaces; shall be placed to allow five (5') feet of passageway along the sidewalk at

all times and not obstruct pedestrian movement, vehicle movement and parking, and shall be of durable material and weighted to withstand strong winds; and,

6. The tables and chairs are to be maintained by the property owner and shall be removed and stored inside the building when not in use; the outdoor dining area and general exterior of the building shall be kept clean and orderly at all times; other improvements, interference with pedestrian movement or the parking lane and disturbance of streetscape planters, existing trees and roots shall be prohibited; and,

7. A copy of the approved ordinance with a diagram of the encroachment area shall be displayed inside the business at all times; and,

8. All outdoor musical performances and use of sound-amplifying devices shall end by 10:00 p.m. due to the proximity of the outdoor dining area to residential properties; and,

9. Grantee shall provide a cigarette receptacle for patrons; Grantee and its patrons shall comply with City Code of Ordinances Chapter 8, Environmental Health and Sanitation, Article IV, Pollution Control, Division 5, Regulations and Requirements Relating to Smoking of Tobacco Products, et. seq. and Grantee shall post signage that smoking is prohibited within the designated encroachment area; and,

10. Any items for which a Certificate of Design Approval has not been granted shall be submitted for design review prior to installation; and,

11. Sandwich board signs shall not be placed within the five (5') foot pedestrian passageway along the sidewalk; and,

12. Tables and chairs shall be placed in line with the center of the City's planting area and shall not be placed over grates or utility access panels.

13. Booths, tables and or food stations used for preparation, staging and or service of food and or beverages are strictly prohibited.

PROVIDED FURTHER that the privilege granted hereby may be modified or terminated by Columbia City Council at any time without notice to the Grantee.

PROVIDED FURTHER that a certificate of insurance be issued as evidence of general liability insurance with at least the minimum amount of \$600,000.00 for personal injury and property damage and naming the City as an insured, be provided to and filed annually with the City Clerk by Grantee, as required by Chapter 11, Licenses, Permits, Business Regulations, Article III, Contractors, Sec. 11-71, 1998 Code of Ordinances of the City of Columbia, South Carolina.

BE IT FURTHER ORDAINED that Grantee, in consideration of the above privilege, shall at its expense provide for protection and, if necessary, relocation of all utilities that might be within this area to the satisfaction of the City Manager.

Requested by:

Assistant City Manager Gentry

Mayor

Approved by:

City Manager

Approved as to form:

ATTEST:

City Attorney

City Clerk

Introduced:

Final Reading:

**CITY COUNCIL
ENCROACHMENT SUMMARY
2019-044**



**1600 BLOCK OF MAIN STREET
ADJACENT TO 1621 MAIN STREET
THE GRAND
TABLES AND CHAIRS**

Subject Property:	1600 block of Main Street and adjacent to 1621 Main Street
Council District:	2
Proposal:	Request approval for the placement and maintenance of 12 tables and 48 chairs for use by its patrons for outdoor dining during its normal business hours, as shown on the attached drawing.
Applicant:	Scott Middleton
Staff Recommendation:	Recommend Approval
Conditions:	1. See attached ordinance for conditions.

Detail:	The applicant is requesting approval for the placement and maintenance of twelve (12) tables and fourteen (48) chairs within the tree zoned and sidewalk right of way for use by its patrons for outdoor dining normal business hours of 11:00 a.m. until 12:00 a.m. Monday through Thursday, 11:00 a.m. until 2:00 a.m. on Friday, 9:00 a.m. until 2:00 a.m. on Saturday and 9:00 a.m. until 12:00a a.m. on Sunday, as shown on the attached drawing.
----------------	--

CITY AGENCY COMMENTS FOR ENCROACHMENT	
Planning & Development	Recommend Approval.
Streets	Recommend Approval.
Utilities & Engineering	Recommend Approval.
Traffic Engineering	Recommend Approval.
Fire Department	Recommend Approval.
Forestry	Recommend Approval.
Land Development	Recommend Approval.

The Grand Encroachment

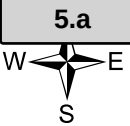
5.a



© 2019 Pictometry

City of Columbia

The Grand Encroachment



Tuesday, May 28, 2019



CITY OF COLUMBIA GIS DATA DISCLAIMER

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**REQUEST FOR A PERMANENT COMMERCIAL ENCROACHMENT ORDINANCE
(INCLUDING OUTDOOR DINING/LANDSCAPING/STUDENT HOUSING)**

5.a

For a continuing encroachment on any type of property in which the City has an interest (i.e., rights of way, tree zone, sidewalk, streets), the person or entity is required to have an encroachment ordinance enacted by City Council permitting the encroachment. Encroachment ordinances are required for but not limited to: irrigation systems; landscaping; fencing; walls; pavers; walkways; outdoor dining items (chairs, tables, umbrellas, etc.); downspout, bollard and directional signs (i.e., churches) Business signs are NOT permitted via an encroachment. Encroachments must comply with all existing City codes, rules and regulations, the Americans with Disabilities Act, if applicable, and are subject to review and approval by City staff. Enactment of the encroachment ordinance by a majority vote of City Council, which is a discretionary legislative act, is also required. In order to obtain an encroachment ordinance from the City of Columbia, it will be necessary for the City of Columbia to be named as an additional insured on your insurance policy with limits being increased to \$600,000 as required by Sec. 11-215. It is recommended that you contact your insurance provider to determine if it will name the City of Columbia as an additional insured prior to submitting your request for an encroachment ordinance. If you have any questions concerning these requirements, please contact Chip Timmons with Risk Management, (803) 733-1015 or email to ctimmons@columbiasc.net.

Please complete and submit this form along with photographs and drawings or site plan drawn to scale (including a 8-1/2" x 11" to Johnathan Chambers by e-mail at jechambers@columbiasc.net; fax at 803-255-8935; or mail to Johnathan Chambers, Development Services, POB 147 Columbia, SC 29217, for preparation of an encroachment ordinance. Copies to City departments should be directed to the contact person for that department as shown below.

All work shall comply with the requirements of the City of Columbia and South Carolina Department of Transportation now in existence or hereafter enacted. The materials and type of finish to be used are to be approved by the City Engineer prior to installation. Any damage to the street or sidewalk caused by construction shall be repaired to the satisfaction of the City Manager. Improvements within the encroachment shall be maintained by the grantee at no cost to the City in a manner approved by the City Manager. Property owned, operated and maintained by SCDOT shall comply with SCDOT encroachment requirements.

Date: 9/20/17 Property Owner: Scott Middleton / David Keller (GM)
Business Name/Applicant's Name if different than owner: The Grand
Contact Information: Telephone Number: 803-448-8490 Fax Number: _____
Mailing address: 1619 Main St, Columbia SC 29201 E-mail address: edkeller@michaelscafecatering.com
Business Name/Development Name for Encroachment: _____

Encroachment type: ☐ Wall ☐ Fence ☐ Columns ☐ Steps ☐ Irrigation System ☐ Landscaping ☐ Driveway ☐ Pavers ☒ Sidewalk/Walkway
☒ Planters ☐ Awning ☐ Underground Utilities Other: tables + chairs

Dimensions (height/width/length):
(i.e. 6'x42' wooden privacy fence;
two 12'x4'x3' concrete steps)

Table: 40" SQ x 29" H. chairs: 22" W x 21" D x 33"

Construction material:

Aluminum

☒ **OUTDOOR DINING:** The Fire Marshal's posted capacity allowed within the business at the time of enactment of the outdoor dining encroachment ordinance shall include the total number of patron seating approved for the outdoor dining encroachment area, if not already included in the posted capacity allowance, so that patrons relocating from inside to the outside or from outside to the inside do not cause the posted capacity to be exceeded.

Hours/days of operation for outdoor dining: 9am - 2am

Posted Maximum Capacity Allowance (inside/outside combined): _____ No. of chairs outdoors: _____ No. of Tables Outdoors: _____

Do you serve: ☒ Wine ☒ Beer ☒ Liquor SCDOR ABL No.: (Pending) If not, do you intend to apply for an ABL license? Yes

I acknowledge that the adjoining property owners and businesses have been contacted and approve the addition of outdoor dining at this location to include the service of beer, wine and/or liquor if applicable during the business hours noted above, and that any changes made to the business hours, use of the encroachment area or items allowed within the encroachment area will require an amendment to the encroachment ordinance.

[Signature] GM
Name/Title: _____
Date: 9/20/17

I acknowledge that any changes made to the business, hours, use of the encroachment area, or items allowed within the encroachment area, to include obtaining a license to sell beer, wine and/or liquor will require an amendment to the encroachment ordinance.

[Signature] GM
Name/Title: _____
Date: 9/20/17

The proposed ordinance will be sent to the requesting party and City offices for review and approval. Johnathan Chambers will compile the recommendations and forward them to the City Clerk for scheduling before City Council. This process may take from 30-90 days.

CONTACT

Johnathan Chambers
John Fellows
Brian Cook
Jerry Thompson
Zach Kay
Amy Moore
Lucinda Statler
Jerry Thompson
Scott Holder
Denny Daniels
Robert Anderson
Robert Sweatt
David Brewer
Sara Hollar
John Hooks
Chip Timmons
Kris Scott
Linda Matney
LR: 1/2017

DEPARTMENT

Development Services (Land Development)
Development Services (Planning)
Development Services (Zoning)
Development Services (Building Inspections)
Development Services (Development Center)
Development Services (Historic Preservation)
Development Services (Urban Design)
Development Services (Commercial Plan Review)
Development Services (Landscaping)
Utilities & Engineering (Construction Management)
Public Works (Administration)
Public Works (Street Division)
Public Works (Traffic Engineering)
Public Works (Forestry & Beautification)
Public Works (Solid Waste)
Risk Management
Fire Department
Parking Services

PHONE

803-545-3333
803-545-3222
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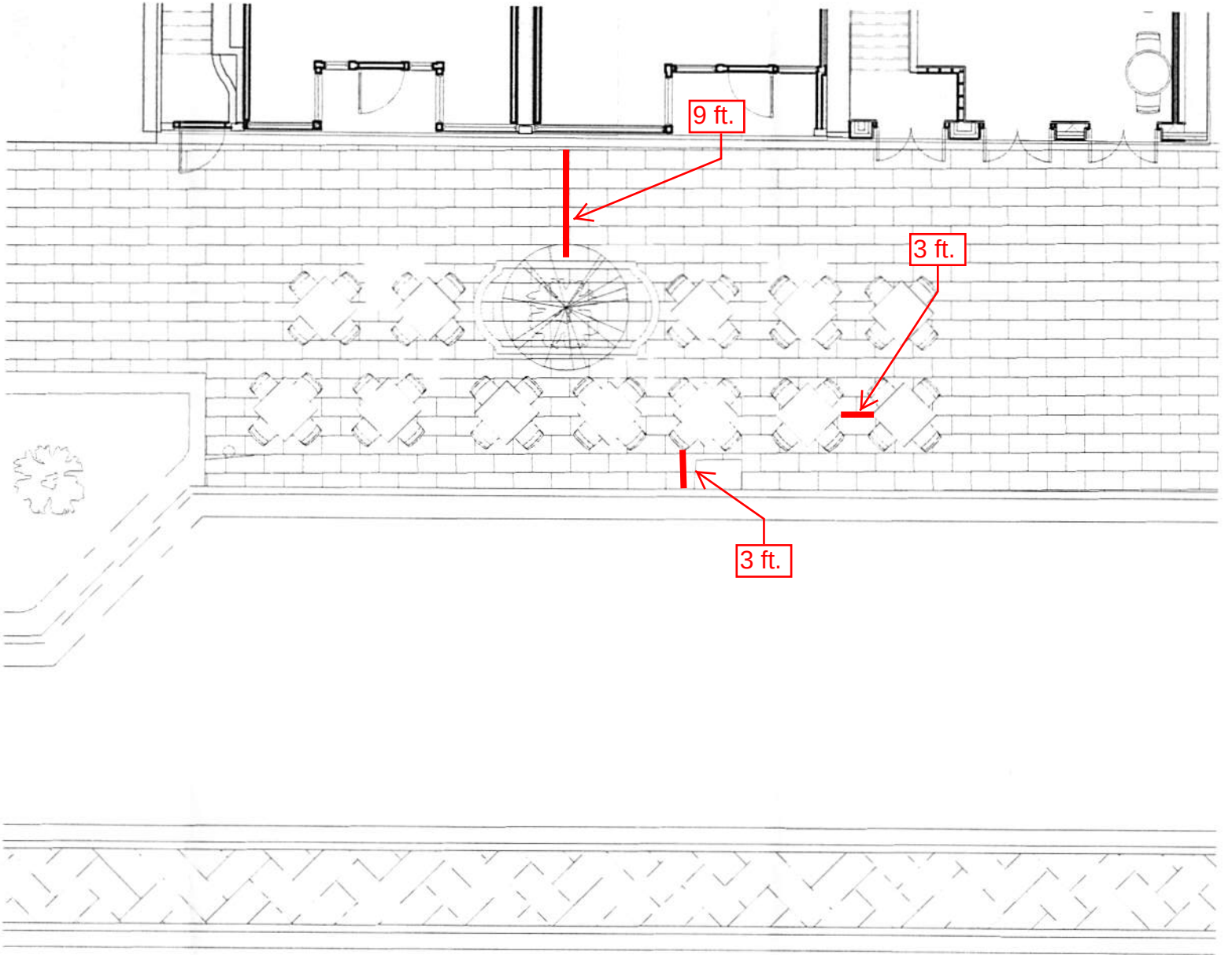
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803-733-8648
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803-733-8245
803-401-8839
803-733-8523

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cfkdscott@columbiasc.net
lsmatney@columbiasc.net





Project number R251.15
Date 10.23.2017

0.00

1619-1625 MAIN STREET
SIDEWALK DINING SEATING LAYOUT

Scale 1" = 10'-0"

LAMBERT
ARCHITECTURE +
CONSTRUCTION SERVICES
architecture construction services planning historic consulting
P.O. BOX 5250 COLUMBIA, SC 29250
522 LADY STREET, COLUMBIA SC 29201
PHONE 803.451.8359 www.lambertarch.com

Panama Jack Newport Beach Armchair Dining Set (5 PC) - Grey

Newport Beach Armchair Dining Set: Includes. One dining table, measures 40" SQ. x 29" H. Four dining armchairs, each measures 22" W x 21" D x 33" H Features. Five-piece dining set.





We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-038 To Raise Revenue and Adopt the Budget for the City of Columbia, South Carolina, for the Fiscal Year ending June 30, 2020

FUNDING SOURCE & ORIGINAL BUDGET:

FOCUS AREAS: Attracting & Retaining Talent, Connecting Our Community, Economic Prosperity - Endless Possibilities, Empowering Our Residents, Planning Together

ATTACHMENTS:

- **#a:** 2019-038 adopt 2019-2020 budget (PDF)
- **#b:** FY 19_20_Budget (PDF)

ORDINANCE NO.: 2019-038

*To Raise Revenue and Adopt the Budget for the City of Columbia, South Carolina,
for the Fiscal Year ending June 30, 2020*

BE IT ORDAINED by the Mayor and Council this ____ day of _____, 2019 as follows:

Section 1. That a tax to cover the period from the first day of July 2019, to the thirtieth day of June 2020, both inclusive, for the sums and in the manner hereinafter mentioned, is and shall be levied, collected and paid into the treasury of Richland and Lexington Counties, South Carolina, for the credit to The City of Columbia, South Carolina, for the use and service thereof; that is to say, a tax rate of ninety-eight and one tenth (98.1) mills, on the value of all real estate and personal property of every description owned and used in The City of Columbia, South Carolina, except such as is exempt from taxation under the Constitution and law of the State of South Carolina, is and shall be levied and paid into the County Treasury for the credit to The City of Columbia for the corporate purposes, permanent improvements, for the purpose of paying current expenses, and for the payment of interest and retiring outstanding bonds of the said City. Such tax is levied on such property as assessed for taxation for County and State purposes.

Section 2. That the budget heretofore adopted by the City Council and the estimated revenue for the payment of same is hereby adopted and is hereby made a part hereof as fully as if incorporated herein and a copy thereof is attached hereto.

Section 3. That the billing dates, the penalty dates, and the amount of penalty which shall be levied for delinquent taxes shall be the same as those established by Richland and Lexington Counties pursuant to State Law.

Section 4. That the City Manager shall administer the budget and may authorize the following to achieve the goals of this budget:

- a. Authorize the transfer of appropriated funds within and between departments and funds as necessary.
- b. Controls shall be made by fund appropriation.
- c. Designate continuing projects from fund balances.

Encumbrances will be carried over to the next year as a reserve to the fund balance.

Expenditures approved by council shall automatically carry amendments to fund appropriation where necessary.

Section 5. If for any reason any sentence, clause or provision of this ordinance shall be declared invalid, such shall not affect the remaining provisions hereof.

Requested by:

City Manager _____

Mayor _____

Approved by:

City Manager _____

Approved as to form:

Senior Assistant City Attorney

ATTEST:

City Clerk

Public Hearing:

Introduced:

Final Reading:

GENERAL FUND SUMMARY
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	BUDGET FY 18/19	PROPOSED FY 19/20	DIFFERENCE	% CHANGE
<u>REVENUE</u>					
GENERAL PROPERTY TAX	55,857,361	57,413,298	59,015,129		
LICENSES AND PERMITS	40,794,140	41,441,360	42,163,401		
FROM OTHER AGENCIES	15,707,565	16,113,090	16,326,135		
CURRENT SERVICE CHARGES	12,752,823	12,702,890	12,785,490		
FINES & FORFEITURES	711,132	868,000	1,062,800		
MISCELLANEOUS REVENUE	300,798	200,300	225,300		
INTEREST ON INVESTMENT	53,817	200,000	197,500		
RENTS & SALE OF PROPERTY	353,032	397,000	397,000		
TOTAL REVENUE	126,530,668	129,335,938	132,172,755	2,836,817	2.2%
<u>TRANSFERS IN</u>					
FROM OTHER FUNDS	5,061,994	-	-		
FROM ACCOMMODATIONS TAX	25,000	25,000	25,000		
FROM HOSPITALITY TAX	3,700,000	3,700,000	3,700,000		
FROM CAPITAL LEASE PROCEEDS	348,539	8,000,000	8,000,000		
FROM PARKING FUND	500,000	500,000	500,000		
FROM WATER & SEWER OPERATING	4,189,680	4,189,680	4,189,680		
FROM STORM WATER	560,000	560,000	560,000		
FROM UN-APPROPRIATED SURPLUS	-	1,790,534	3,000,000		
TOTAL TRANSFERS IN	14,385,213	18,765,214	19,974,680	1,209,466	6.4%
TOTAL GENERAL FUND REV & TRANS	140,915,881	148,101,152	152,147,435	4,046,283	2.7%
<u>DEPARTMENTS</u>					
LEGISLATIVE - MAYOR & CITY COUNCIL	769,973	809,508	809,674		
ADMINISTRATION - CITY MANAGER	574,289	655,463	714,175		
GOVERNMENTAL AFFAIRS	446,005	395,306	398,881		
ADMINISTRATION - ACM DEVELOPMENT & COMMUNITY SRVCS	416,142	472,505	487,766		
ADMINISTRATION - ACM CHIEF FINANCIAL OFFICER	208,170	233,058	237,304		
ADMINISTRATION - ACM	288,098	175,476	175,476		
HUMAN RESOURCES	1,086,648	1,135,948	1,166,596		
BUDGET & PROGRAM MANAGEMENT OFFICE	342,784	389,558	392,790		
PUBLIC RELATIONS	764,945	783,240	807,344		
COUNCIL SUPPORT SERVICES	507,910	390,715	535,799		
LEGAL	2,027,009	2,198,111	2,277,051		
CENTRAL GOVERNMENT	7,431,973	7,638,888	8,002,857		
MUNICIPAL COURT	2,670,450	2,846,485	2,614,118		
FINANCE	1,838,567	2,053,259	2,105,975		
OFFICE OF BUSINESS OPPORTUNITIES	832,950	927,364	1,071,727		
COMMUNITY DEVELOPMENT	321,533	376,180	392,833		
PLANNING & DEV. SERVICES	3,301,142	3,671,226	3,671,319		
POLICE	42,325,905	40,165,765	42,366,353		
EMERGENCY MANAGEMENT	274,521	597,984	604,506		
911 EMERGENCY COMMUNICATIONS	3,059,402	3,058,656	3,098,158		
FIRE	22,589,334	23,599,972	23,638,847		
PARKS & RECREATION	12,421,265	13,324,713	13,587,893		
PUBLIC WORKS	19,320,236	21,653,257	21,656,109		
INFORMATION TECHNOLOGY	3,822,913	4,219,960	4,238,369		
COLA / MERITS	-	-	910,269		
TOTAL DEPARTMENT	120,210,191	124,133,709	127,959,333	3,825,624	3.1%
<u>NON-DEPARTMENTAL & MISC.</u>					
COUNCIL REQUESTED PROJECTS	-	300,000	-		
COMMUNITY PROMOTIONS	195,007	-	-		
CAPITAL LEASE PURCHASE	2,354,193	3,421,952	5,106,644		
SOLICITOR'S OFFICE	161,863	215,817	215,817		
PUBLIC DEFENDER	100,000	100,000	100,000		
HOMELESS SERVICES	983,754	1,000,000	1,000,000		
DETENTION CENTER PER DIEM	430,605	600,000	600,000		
NON-DEPARTMENTAL & MISC.	38,537	40,000	40,000		
OFFICE SPACE LEASE - 1225 LADY STREET	631,069	550,000	640,000		
TOTAL NON-DEPARTMENTAL	4,895,028	6,227,769	7,702,461	1,474,692	23.7%
TOTAL EXPENDITURES	125,105,219	130,361,478	135,661,794	5,300,316	4.1%
<u>TRANSFERS OUT</u>					
TO INTERNAL SERVICE FUNDS	3,195,232	3,169,923	3,169,923		
TO DEBT SERVICE	5,814,150	4,955,600	3,668,213		
TO COMPONENT UNIT	1,571,679	1,614,151	1,647,505		
TO GRANTS	384,444	-	-		
TO CAPITAL IMPROVEMENTS	297,159	-	-		
TO CAPITAL REPLACEMENTS	-	8,000,000	8,000,000		
TOTAL TRANSFERS OUT	11,262,664	17,739,674	16,485,641	(1,254,033)	-7.1%
TOTAL BUDGET	136,367,883	148,101,152	152,147,435	4,046,283	2.7%
TOTAL SURPLUS/(DEFICIT)	4,547,998	0	0		

City of Columbia

WATER/SEWER OPERATING FUND SUMMARY
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	BUDGET FY 18/19	PROPOSED FY 19/20	Increase / (Decrease)	% Change
<u>REVENUE</u>					
WATER SALES	83,533,964	97,402,576	102,504,614		
SEWER SALES	51,039,118	62,062,997	59,863,937		
MISCELLANEOUS REVENUE	79,872	45,042	45,042		
FINES AND FORFEITURES	679,032	656,500	656,500		
TOTAL OPERATING REVENUES	135,331,986	160,167,115	163,070,093	2,902,978	1.8%
<u>NON-OPERATING REVENUE & TRANSFERS IN</u>					
INTEREST	1,696,590	1,666,557	3,964,600		
RENTS & USE OF PROPERTY	(41,308)	162,328	162,328		
CONTRIBUTED CAPITAL	5,817,810	0	0		
TOTAL NON-OPERATING REVENUES	7,473,092	1,828,885	4,126,928	2,298,043	125.7%
TOTAL REVENUE & TRANSFERS IN	142,805,078	161,996,000	167,197,021	5,201,021	3.2%
<u>EXPENDITURES</u>					
<u>Operating Departments & Non-Departmental</u>					
ADMINISTRATION	968	921,602	1,175,919		
CUSTOMER CARE CENTER	3,994,275	4,962,543	5,229,303		
FINANCE	1,684,602	2,042,612	2,060,166		
FIRE HYDRANT MAINTENANCE	557,846	688,926	613,190		
POLICE - CSO/PUBLIC SAFETY	826,363	1,382,177	1,408,674		
PUBLIC WORKS-STREET REPAIR	928,072	1,560,023	1,621,015		
GENERAL SERVICES PUBLIC BLDGS.	1,856,540	2,318,883	2,387,784		
GIS MANAGEMENT	501,707	636,302	656,966		
UTILITIES	47,038,741	65,693,068	64,739,318		
ENGINEERING	11,543,822	12,407,638	12,496,568		
COLA / MERITS	0		1,000,000		
TOTAL OPERATING	68,932,936	92,613,774	93,388,903	775,129	0.8%
<u>Non-Operating Departments & Non-Departmental</u>					
ECONOMIC DEV DEPARTMENT	954,761	1,273,023	1,286,093		
TOTAL NON-OPERATING DEPARTMENTS	954,761	1,273,023	1,286,093	13,070	1.0%
DEPRECIATION	39,532,110				
DEBT SERVICE	22,108,171	35,224,748	37,525,517		
ECONOMIC DEV SPECIAL PROJECTS	53,500	78,500	78,500		
TECHNOLOGY REPLACEMENTS	32,656	150,000	1,000,000		
NON-DEPARTMENTAL	50,750	85,000	85,000		
BAD DEBT	3,065,605	795,328	795,328		
RESERVE	0	3,955,947	8,718,000		
TOTAL NON-DEPARTMENTAL OPERATING	64,842,792	40,289,523	48,202,345	7,912,822	19.6%
<u>TRANSFERS OUT</u>					
TO GENERAL FUND/INDIRECT COST ALLOCATION	4,189,680	4,189,680	4,189,680		
TO WATER/SEWER CAPITAL IMP.		21,500,000	17,500,000		
TO INTERNAL SERVICE FUNDS	2,628,969	2,130,000	2,630,000		
TOTAL TRANSFERS	6,818,649	27,819,680	24,319,680	(3,500,000)	-12.6%
TOTAL BUDGET	141,549,138	161,996,000	167,197,021	5,201,021	3.2%
TOTAL SURPLUS/(DEFICIT)	1,255,940	0	0		

STORM WATER OPERATING SUMMARY
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	BUDGET FY 18/19	PROPOSED FY 19/20	Increase / (Decrease)	% Change
<u>REVENUE</u>					
<u>Operating Revenue</u>					
STORM WATER FEE	12,667,731	13,378,499	13,988,299	609,800	4.6%
STORM WATER REVIEW	20,450	20,000	20,000		
STORM WATER INSPECTIONS	11,100	15,000	15,000		
TOTAL OPERATING REVENUES	12,699,281	13,413,499	14,023,299	609,800	4.5%
<u>Non-operating Revenue & Transfers</u>					
INTEREST & USE OF PROPERTY	168,334	53,000	117,300		
FROM FUND BALANCE	1,879,480	0	229,500		
TOTAL NON-OPERATING REVENUES	2,047,813	53,000	346,800		
TOTAL REVENUES & TRANSFERS IN	14,747,095	13,466,499	14,370,099	903,600	6.7%
<u>EXPENDITURES</u>					
<u>DEPARTMENTS</u>					
ENGINEERING	1,678,971	3,024,399	3,185,656		
PUBLIC WORKS	2,557,825	4,218,479	4,287,438		
COLA/MERIT			80,000		
TOTAL DEPARTMENTS	4,236,796	7,242,878	7,553,094	310,216	4.3%
<u>NON-DEPARTMENTAL EXPENSES</u>					
DEPRECIATION	1,130,886				
DEBT SERVICE		2,732,000	2,492,986		
NON-DEPARTMENTAL/MISC.	145,375				
BAD DEBT	2,788	0	0		
RESERVE		2,931,621	2,029,019		
TOTAL NON-DEPARTMENTAL	1,279,049	5,663,621	4,522,005	(1,141,616)	-20.2%
<u>TRANSFERS OUT</u>					
TO GENERAL FUND/INDIRECT COST ALLOCATION	560,000	560,000	560,000		
TO STORM WATER CAPITAL PROJECTS		0	1,735,000		
TOTAL OTHER	560,000	560,000	2,295,000	1,735,000	309.8%
TOTAL BUDGET	6,075,845	13,466,499	14,370,099	903,600	6.7%
TOTAL SURPLUS/(DEFICIT)	8,671,250	0	0		

City of Columbia

PARKING OPERATING FUND SUMMARY
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	BUDGET FY 18/19	PROPOSED FY 19/20	DIFF	% CHANGE BUDGET
<u>OPERATING REVENUES</u>					
STREET PARKING METERS	3,097,733	2,700,000	3,100,000		
PARKING GARAGES	3,053,141	2,771,726	3,083,000		
PARKING LOTS	423,340	352,400	355,400		
MISCELLANEOUS REVENUE	11,586	10,250	11,750		
VALIDATIONS	0	4,000	10,000		
IN-OUT PARKING	68,520	60,000	70,000		
PARKING METER BAG FEE	182,977	125,000	185,000		
NON-MOVING VIOLATIONS	1,533,291	2,000,000	1,723,423		
TOTAL REVENUE	8,370,587	8,023,376	8,538,573	515,197	6%
<u>NON-OPERATING & TRANSFERS IN</u>					
INTEREST REVENUE	90,329	120,000	120,200		
RENTS & USE OF PROPERTY	106,751	108,675	103,400		
FROM FUND BALANCE	0	440,937	96,797		
TOTAL NON-OPERATING & TRANSFERS	197,080	669,612	320,397	(349,215)	-52%
TOTAL REVENUES & TRANSFERS IN	8,567,667	8,692,988	8,858,970	165,982	2%
<u>EXPENDITURES</u>					
<u>Operating Departments</u>					
FINANCE - PARKING PAVMENT SERVICES	110,106	113,467	104,207		
PARKING OPERATIONS	2,283,824	3,086,886	3,089,600		
PARKING FACILITIES	1,576,187	1,659,536	1,781,081		
TRAFFIC - SIGN SHOP	80,913	99,655	100,123		
COLA / MERITS	0		80,000		
TOTAL OPERATING DEPARTMENTS	4,051,030	4,959,544	5,155,011	195,467	4%
<u>Non-Departmental</u>					
DEPRECIATION	1,655,373	0	0	-	
DEBT SERVICE	1,659,286	2,809,729	2,706,959		
NON-DEPARTMENTAL/MISC.		5,000	5,000		
TECHNOLOGY REPLACEMENT			100,000		
BAD DEBT / YEAR END ACCRUALS	158,124	0	0		
RESERVE		26,715	0		
TOTAL NON-DEPARTMENTAL	3,472,783	2,841,444	2,811,959	(29,485)	-1%
<u>TRANSFERS OUT</u>					
TO GENERAL FUND	500,000	500,000	500,000		
TO CAPITAL IMPROVEMENTS	76,323	0	0		
TO INTERNAL SERVICES	387,895	392,000	392,000		
TOTAL TRANSFERS	964,218	892,000	892,000	-	0%
TOTAL BUDGET	8,488,031	8,692,988	8,858,970	165,982	2%
TOTAL SURPLUS/(DEFICIT)	79,636	0	0		

HOSPITALITY TAX SUMMARY
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	APPROVED FY 18/19	AMENDED FY 18/19	PROPOSED FY 19/20	Increase / (Decrease)	% Change
<u>REVENUES</u>						
HOSPITALITY TAX	11,585,063	12,063,972	12,063,972	12,063,972		
FINES & LATE FEES	68,554	40,000	40,000	40,000		
INTEREST	6,148					
TOTAL REVENUES	11,659,765	12,103,972	12,103,972	12,103,972	0	0%
<u>TRANSFERS IN & OTHER FINANCING</u>						
FM FUND BALANCE	102,932		781,945			
TOTAL REVENUE & TRANSFERS IN	11,762,697	12,103,972	12,885,917	12,103,972	(781,945)	-6%
<u>EXPENDITURES</u>						
HOSPITALITY TAX COMMITTEE ALLOCATIONS	2,493,048	2,109,500	2,109,500	2,109,500	-	0%
PRIOR YEAR CARRYFORWARDS			298,945			
LINE ITEM AGENCIES	2,662,399	2,771,257	2,801,257	2,771,257	(30,000)	-1%
COUNCIL ALLOCATIONS	185,116	761,857	1,214,857	609,749	(605,108)	-50%
<u>TRANSFERS OUT</u>						
TO GEN. FUND	3,700,000	3,700,000	3,700,000	3,700,000		
TO DEBT SERVICE	2,622,134	2,761,358	2,761,358	2,913,466		
TO CAPITAL PROJECTS	100,000					
TOTAL TRANSFERS OUT	6,422,134	6,461,358	6,461,358	6,613,466	152,108	2%
TOTAL BUDGET	11,762,697	12,103,972	12,885,917	12,103,972	(781,945)	-6%
TOTAL SURPLUS/(DEFICIT)	0	0	0	0		

ACCOMMODATIONS TAX
PROPOSED FY 2019/2020

	ACTUAL FY 17/18	BUDGET FY 18/19	AMENDED BUDGET FY 18/19	PROPOSED FY 19/20	Increase / (Decrease)	% Change
<u>REVENUES</u>						
ACCOMMODATIONS TAX	2,753,342	2,596,160	2,596,160	2,686,160		
INTEREST EARNINGS	1,462					
TOTAL REVENUES	2,754,804	2,596,160	2,596,160	2,686,160		
<u>TRANSFERS IN</u>						
FROM FUND BALANCE	0.10		26,000			
TOTAL REVENUE & TRANSFERS IN	2,754,804	2,596,160	2,622,160	2,686,160	90,000	3.5%
<u>EXPENDITURES</u>						
COMMITTEE ALLOCATIONS	2,390,204	2,442,000	2,442,000	2,528,102	86,102	3.5%
TOTAL GENERAL ALLOCATIONS (5%)	175,089	129,160	155,160	133,058	3,898	3.0%
TOTAL EXPENSES	2,565,293	2,571,160	2,597,160	2,661,160	90,000	3.5%
<u>TRANSFERS OUT</u>						
TO GENERAL FUND	25,000	25,000	25,000	25,000		
TOTAL OTHER FUNDS	25,000	25,000	25,000	25,000		
TOTAL BUDGET	2,590,293	2,596,160	2,622,160	2,686,160	90,000	3.5%
TOTAL SURPLUS/(DEFICIT)	164,511	0	0	0		



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-039 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-143 Water service rates and Sec. 23-149 Sewer service rates (a) and (b)

**FUNDING SOURCE &
ORIGINAL BUDGET:**

FOCUS AREAS: Connecting Our Community, Economic Prosperity - Endless Possibilities, Empowering Our Residents, Planning Together

ATTACHMENTS:

- **#a:** 2019-039 amend Sec. 23-143 Water rates & Sec. 23-149 Sewer rates (PDF)

ORDINANCE NO.: 2019-039

Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-143 Water service rates and Sec. 23-149 Sewer service rates

BE IT ORDAINED by the Mayor and Council this ____ day of _____, 2019, that the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-143 Water service rates and Sec. 23-149 Sewer service rates, are amended to read as follows:

Sec. 23-143. Water service rates.

Generally. Except as otherwise provided by contract, monthly water service charges shall be as follows:

Monthly Water Use (cubic feet)	Meter Size (inches)	In City		Out of City	
		Current	Proposed	Current	Proposed
Minimum--300	3/4"	7.58	8.12	12.90	13.81
	1"	12.67	13.56	21.53	23.05
	1.5"	18.97	20.31	32.25	34.53
	2"	30.35	32.49	51.60	55.24
	3"	60.71	65.00	103.20	110.49
	4"	94.85	101.55	161.25	172.63
	6"	189.94	203.35	322.89	345.69
	8"	303.53	324.96	516.00	552.43
	10"	602.66	645.21	1024.52	1096.85
Additional charge per 100 cubic feet					

Volumetric Charges are based on the customer category.

Monthly Water Use (cubic feet)	In City		Out of City	
	Current	Proposed	Current	Proposed
Residential:				
Next 9,700	2.72	2.91	4.63	4.96
Next 90,000	2.59	2.77	4.40	4.71
Over 100,000	2.45	2.62	4.16	4.45
Irrigation:				
Next 9,700	4.63	4.96	7.87	8.43
Next 90,000	4.40	4.71	7.49	8.02
Over 100,000	4.16	4.45	7.08	7.58
All others:				
Next 9,700	2.59	2.77	4.40	4.71
Next 90,000	2.45	2.62	4.16	4.45
Over 100,000	2.29	2.45	3.90	4.18

Sec. 23-149. Sewer service rates.

(a) Generally. Except as otherwise provided by contract, the monthly sewer service charge shall be as follows:

Size of Meter (inches)	In City		Out of City	
	Current	Proposed	Current	Proposed
5/8	7.58	8.12	12.90	13.81
1	7.58	8.12	12.90	13.81
1½	7.58	8.12	12.90	13.81
2	12.14	13.00	20.63	22.09
3	24.28	25.99	41.27	44.18
4	37.94	40.62	64.49	69.04
6	75.88	81.24	129.00	138.11
8	121.42	129.99	206.40	220.97
10	189.71	203.10	322.50	345.27

Monthly Water Use (cubic feet)	Monthly Sewer Service Charge			
	In City		Out of City	
	Current	Proposed	Current	Proposed
Each 100 cubic feet	3.94	4.22	6.71	7.18

(b) Consumers using water cooling towers for air conditioning. Consumers using water cooling towers for air conditioning systems shall be given a credit of 30 cubic feet per ton per month during the service periods commencing in the months of April through October. The minimum charge shall be:

Size of Meter (inches)	In City		Out of City	
	Current	Proposed	Current	Proposed
5/8	12.30	13.17	15.65	16.75
1	17.35	18.57	22.91	24.53
1½	22.38	23.96	30.17	32.30
2	32.46	34.75	44.65	47.80
3	52.60	56.31	73.67	78.87
4	92.88	99.44	131.69	140.99
6	193.58	207.25	276.76	296.30
8	274.13	293.48	392.82	420.55
10	603.90	646.54	867.93	929.21

(c) Surcharge for excess BOD or suspended solids. If any person discharges into the sanitary sewerage system a waste containing BOD concentration or suspended solids in excess of 300 milligrams per liter, then such person shall pay an additional cost according to rates determined by the city council. This monthly surcharge will be assessed on each pound of BOD and each pound of suspended solids in excess of 300 milligrams per liter as follows:

	BOD Rate	Suspended Solids Rate
Effective July 1, 1998	\$0.08	\$0.06
Effective July 1, 1999	0.11	0.08
Effective July 1, 2000	0.14	0.10
Effective July 1, 2001	0.17	0.12
Effective July 1, 2002	0.20	0.14

(ed) *Limitation on charge on single-family residences.* Maximum sewer charge on single-family residences during the service periods commencing in the months of April through October will be 1,400 cubic feet.

(de) *Apartments and trailer parks.* Sewer rates for apartment buildings and trailer parks shall be the base rate of a single-family residence per dwelling unit plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(ef) *Hotels, motels, dormitories and roominghouses.* Sewer rates for hotels, motels, dormitories and roominghouses shall be one-half the base rate of a single-family residence per room plus a base fee based on meter connection size plus the rate per 100 cubic feet as reflected by water consumption.

(fg) *Contaminated groundwater.* Separate meters for discharges of contaminated groundwater are required. In city or out of city customers discharging contaminated ground water shall pay the out of city base monthly sewer service charge times one and one-half plus the out of city monthly sewer service charge for each 100 cubic feet times one and one-half.

This ordinance is effective as of July 1, 2019.

Requested by:

Mayor and City Council

Mayor

Approved by:

City Manager

Approved as to form:

ATTEST:


Deputy City Attorney

City Clerk

Public Hearing:

Introduced:

Final Reading:



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-040 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-150 Discharge of septic tank waste and repealing Sec. 23-151 Use of septic tanks where public sewer is available

FUNDING SOURCE & ORIGINAL BUDGET:

FOCUS AREAS: Economic Prosperity - Endless Possibilities, Empowering Our Residents

ATTACHMENTS:

- **#a:** 2019-040 amend Sec. 23-150 Discharge of septic tank waste & repeal Sec. 23-151 Use of septic tanks where public sewer is available(PDF)

ORDINANCE NO.: 2019-040

Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, Sec. 23-150 Discharge of septic tank waste and repealing Sec. 23-151 Use of septic tanks where public sewer is available

BE IT ORDAINED by the Mayor and Council this ____ day of _____, 2019, that the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, amends Sec. 23-150 Discharge of septic tank waste and repeals Sec. 23-151 Use of septic tanks where public sewer is available in its entirety, as follows:

Sec. 23-150. Discharge of septic tank hauled waste.

(a) ~~It shall be unlawful for any person to discharge solid or liquid waste into the sanitary sewer system unless the standards of acceptable waste established by ordinance are met and the discharge is made through an approved connection. No material shall be discharged into the public sewer system through a manhole without a permit from the director of utilities and engineering, which permit shall be issued only in a emergency involving the public health and safety.~~

(ba) Hauled waste shall be deposited at an approved location at the wastewater treatment plant. Each depositor shall be approved by the director of utilities and engineering and shall be properly licensed to conduct such a business. Discharge of wastewater transported from private utilities is prohibited. The following fees shall be paid prior to the discharge of each load:

Gallons	Portable Toilet, Septic Tank and Grease Trap Wastes	Contaminated Groundwater
1—500	\$60.00	\$121.00
501—1,000	72.00	144.00
1,101—1,500	84.00	168.00
1,501—2,000	96.00	192.00
2,001—2,500	108.00	216.00
2,501—3,000	120.00	240.00
3,001—3,500	132.00	264.00
3,501 or more	\$12.00 per 500 gallons or any portion thereof over 3500 gallons	\$24.00 per 500 gallons or any portion thereof over 3500 gallons

(eb) Wastewater discharges having a stabilized pH lower than 6.0 or higher than 9.0 shall be subject to an additional pH adjustment charge or shall be prohibited as follows:

Less than 3.0 Prohibited

From 3.0 to 4.9 \$10.00

From 5.0 to 5.9 5.00

From 6.0 to 9.0 No charge

From 9.1 to 10.0 5.00

From 10.1 to 12.0 10.00

Greater than 12.0 Prohibited

Sec. 23-151. Use of septic tanks where public sewer is available.

~~It shall be unlawful for any person owning property within the city to maintain or use a septic tank where a public sewer is accessible for connection, subject to the following exception: Use of a septic tank in existence prior to the availability of a public sewer accessible for connection is permitted until such time as repair is necessary to place the septic tank in proper working order or the septic tank is malfunctioning or the septic tank needs to be pumped or the septic tank is pumped, whichever shall first occur. Upon repair, malfunction, the need to be pumped or pumping,~~

connection to the public sewer accessible for connection is mandatory. Such connection shall be made within 30 days after the owner of the property serviced by the septic tank is given written notice by the public services department of the city that connection is required by virtue of repair, malfunction, the need to pump or pumping. Installation of new septic tanks where a public sewer is accessible is strictly prohibited. Any violation of this section shall a misdemeanor, punishable, upon conviction, in accordance with section 1-5.

This ordinance is effective as of July 1, 2019.

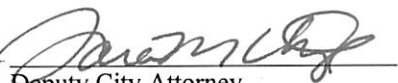
Requested by:

Assistant City Manager Shealy

Approved by:

City Manager

Approved as to form:


Deputy City Attorney

Mayor

ATTEST:

City Clerk

Public Hearing:

Introduced:

Final Reading:



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-041 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates to add Sec. 23-155 Industrial user permit fees

**FUNDING SOURCE &
ORIGINAL BUDGET:**

FOCUS AREAS: Attracting & Retaining Talent, Economic Prosperity - Endless Possibilities, Empowering Our Residents

ATTACHMENTS:

- **#a:** 2019-041 add Sec 23-155 Industrial user permit fees (PDF)

ORDINANCE NO.: 2019-041

Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates to add Sec. 23-155 Industrial user permit fees

BE IT ORDAINED by the Mayor and Council this ____ day of _____, 2019, that the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article V, Water and Sewer Rates, to add Sec. 23-155 Industrial user permit fees to read as follows:

Sec. 23-155. Industrial user permit fees.

An annual fee of \$200.00 will be assessed every July for all active permits on July first of that year.

This ordinance is effective as of July 1, 2019.

Requested by:

Assistant City Manager Shealy

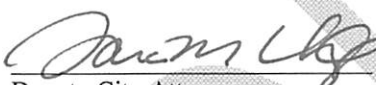
Mayor

Approved by:

City Manager

Approved as to form:

ATTEST:


Deputy City Attorney

City Clerk

Public Hearing:

Introduced:

Final Reading:



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: *Shari Ardis, Legal Office Manager*

SUBJECT: Ordinance No.: 2019-042 Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article IV, Wastewater Service, Sec. 23-112 Violations; penalty

**FUNDING SOURCE &
ORIGINAL BUDGET:**

FOCUS AREAS: Economic Prosperity - Endless Possibilities, Empowering Our Residents

ATTACHMENTS:

- **#a:** 2019-042 amend Sec. 23-112 Violations; penalty (PDF)

HISTORY:

06/04/19

Columbia City Council

APPROVED ON FIRST READING.

ORDINANCE NO.: 2019-042

Amending the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article IV, Wastewater Service, Sec. 23-112 Violations; penalty

BE IT ORDAINED by the Mayor and Council this ____ day of _____, 2019, that the 1998 Code of Ordinances of the City of Columbia, South Carolina, Chapter 23, Utilities and Engineering, Article IV, Wastewater Service, Sec. 23-112 Violations; penalty, is amended to read as follows:

Sec. 23-112. Violations; ~~penalty~~ administrative orders; penalties.

(a) Civil Penalties: Any person who violates the provisions of this Ordinance or the provisions of any permit or order issued pursuant to this Ordinance is subject to a civil penalty of up to \$2000 for each day of violation. Each day on which a violation occurs or continues shall be deemed a separate and distinct violation. In the case of a monthly or long-term average discharge limit, the civil penalty may be assessed for each day during the period of the violation. Prior to imposition of a civil penalty, the city will issue a rule to show cause pursuant to Section 23-1.

(b) Administrative Orders: In addition to any other remedy available under this Section, the POTW may issue an administrative order (1) imposing a schedule to achieve compliance with this Ordinance or a permit issued pursuant to this Ordinance, (2) ordering a user to cease and desist activities, including the discharge of wastewater, in violation of this Ordinance or a permit issued pursuant to this Ordinance, (3) terminating water and sewer service, (4) revoking a permit issued pursuant to this Ordinance; or (5) ordering such other action as deemed necessary to address a violation of this Ordinance or a permit issued pursuant to this Ordinance.

Any person who has been issued an administrative order may request a hearing by filing a request for hearing within fifteen calendar days of the date of issuance of the administrative order. The request shall be filed with the city clerk and shall include reference to the administrative order and the reasons for the request for a hearing. The hearing shall be conducted in accordance with Section 23-1.

(c) Criminal Penalties: Any person who knowingly discharges waste into any portion of the system in violation of this article; or who violates the provision of any permit or order of the approving authority issued in accordance with this article; or who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document or files required to be maintained pursuant to this article or any wastewater contribution permit; or who falsifies, tampers with or knowingly renders inaccurate any monitoring device, shall be deemed guilty of a misdemeanor, punishable, upon conviction, in accordance with section 1-5, with a fine of not more than \$500 or imprisonment for not more than thirty days, or both. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense.

(d) Injunctive Relief: In addition to any other criminal or civil remedies that may be available under this Section, the POTW may bring a civil action to obtain an injunction against any person in violation of this Ordinance or any provision of a permit or order issued pursuant to this Ordinance.

This ordinance is effective as of July 1, 2019.

Requested by:

Assistant City Manager Shealy

Approved by:

City Manager

Approved as to form:

Deputy City Attorney

Public Hearing:

Introduced:

Final Reading:

Mayor

ATTEST:

City Clerk



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: Legal Department

FROM: Shari Ardis, Legal Office Manager

SUBJECT: Ordinance No.: 2019-033 Authorizing the City Manager to execute a Twelfth Amendment to Purchase Agreement between the City of Columbia and Bright-Meyers 2001 LLC for the sale of 5.97 +/- acres (Capital City Stadium), Richland County TMS #11204-02-02

PURPOSE: First reading approval was given on May 7, 2019.

FUNDING SOURCE & ORIGINAL BUDGET:

FOCUS AREAS: Planning Together

ATTACHMENTS:

- **#a:** 2019-033 Twelfth Amendment to Bright-Meyers Agreement (PDF)

HISTORY:

05/07/19	Columbia City Council	APPROVED ON FIRST READING.
06/04/19	Columbia City Council	DEFERRED

ORDINANCE NO.: 2019-033

*Authorizing the City Manager to execute a Twelfth Amendment to Purchase Agreement
between the City of Columbia and Bright-Meyers 2001 LLC for the sale
of 5.97 +/- acres (Capital City Stadium), Richland County TMS #11204-02-02*

BE IT ORDAINED by the Mayor and City Council this ____ day of _____, 2019,
that the City Manager is authorized to execute the attached Twelfth Amendment to Purchase
Agreement, or on a form approved by the City Attorney, between the City of Columbia and Bright-
Meyers 2001 LLC for the sale of 5.97 acres +/- (Capital City Stadium), Richland County TMS
#11204-02-02.

Requested by:

Assistant City Manager Gentry

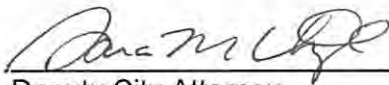
Mayor

Approved by:

City Manager

Approved as to form:

ATTEST:


Deputy City Attorney

City Clerk

Introduced:
Final Reading:

TWELFTH AMENDMENT TO PURCHASE AGREEMENT

This Twelfth Amendment to Purchase Agreement is made and entered into by and between the City of Columbia, hereinafter referred to as "Seller", and Ballpark, LLC, a South Carolina limited liability company, as assignee of Bright-Meyers Assembly Street, LLC, hereinafter referred to as "Buyer".

WITNESSETH:

WHEREAS, Seller and Bright-Meyers 2001 LLC entered into a Purchase Agreement effective August 27, 2012 (as amended by eleven prior instruments, the "Agreement"), which gives Buyer the exclusive right to purchase the property ("Property") described in the Agreement under the terms and conditions of the Agreement; and,

WHEREAS, pursuant to that certain Assignment of Purchase Agreement dated October 15, 2018 Bright Meyers 2001 LLC assigned its rights and obligations under the Agreement to its affiliate, Bright-Meyers Assembly Street, LLC, a Tennessee limited liability company; and

WHEREAS, pursuant to that certain Assignment of Contract dated January 29, 2019 Bright-Meyers Assembly Street, LLC assigned its rights and obligations under the Agreement to Ballpark, LLC; and

WHEREAS, Seller and Buyer mutually desire to further modify, amend and clarify said Agreement.

NOW, THEREFORE, IT IS HEREBY AGREED, that for and in consideration of the sum of Ten and No/100 (\$10.00) Dollars, the receipt and sufficiency of which is hereby acknowledged, the Agreement is amended as follows:

1. Seller hereby acknowledges the assignment of the rights and obligations under the Agreement by Bright-Meyers Assembly Street, LLC to Ballpark, LLC.

2. Paragraph 2 of the Agreement is amended as necessary to state that the Price is increased from One Million Four Hundred Twenty-five Thousand and No/100 (\$1,425,000.00) Dollars to One Million Six Hundred Twenty-five Thousand and No/100 (\$1,625,000.00) Dollars.

3. Paragraph 5 is hereby amended to read:

5. **CONDITIONS AND RESTRICTIONS.** The Seller shall convey the property described in Paragraph 1 hereof to the Buyer in fee simple by proper Indenture Limited Warranty Deed with Covenants, in the form of which is attached hereto as Exhibit "A" and incorporated herein by reference, free from all liens and encumbrances except as are herein agreed to. The Buyer agrees to accept the property subject to any governmental statute or ordinance, zoning ordinance and regulation, building restriction and condition, restrictive covenant, and easements of record, including any shown on a recorded plat; also, any state of facts that an accurate survey would show.

4. Paragraph 6 of the Agreement is amended as necessary to add that Seller agrees not cause the buildings and other improvements located on the Property to be demolished or otherwise removed from the Property unless any such improvements are damaged by fire or other casualty which creates an unsafe or unsightly condition.

5. Paragraph 7 of the Agreement is deleted in its entirety.

6. Paragraph 8 of the Agreement is amended as necessary to state that Buyer shall develop and fund a plan ("Security Plan") to provide private security to monitor the Property in an effort to prevent unauthorized persons from entering the Property. Buyer's Security Plan shall be scalable and shall be provided to the City Manager (or designee) of Seller for review and approval. All modifications reasonably requested by the City Manager (or designee) shall be incorporated into the Security Plan. Such Security Plan shall be provided to the City Manager (or designee) no later than ten (10) days after the Amendment Effective Date,

implemented within ten (10) days after the City Manager's (or designee's) approval thereof, and shall continue until the earlier of Closing or termination of this Agreement. Buyer shall indemnify and hold harmless Seller from any and all actual damages and injuries suffered or incurred as a result of the willful acts or gross negligence of Buyer, or its agents, in implementing and executing the Security Plan.

7. Paragraph 12 of the Agreement is hereby amended to read as follows:

If the Buyer shall default under this Agreement, the Seller's sole remedy shall be to terminate this Agreement and retain and/or receive all Earnest Money as full and complete liquidated damages. Buyer shall be in default under this Agreement if Buyer fails to comply with any term, covenant, provision or requirement of this Agreement within twenty (20) days after receipt of written notice ("Seller's Notice") from Seller specifying such default. In the event the default is of a nature that is not reasonably capable of cure within such twenty (20) day period, Buyer shall commence such curative efforts within such period and thereafter diligently pursue such curative efforts to completion no later than forty-five (45) days after Seller's Notice.

8. Paragraph 14 of the Agreement is amended to provide that the Closing shall take place no later than January 15, 2020; provided however, that Buyer shall give Seller written notice of its intent to close at least eight (8) weeks prior to the desired Closing date.

9. Paragraph 24 of the Agreement is hereby amended to delete the following:

"Seller will obligate up to Five Hundred Thousand and No/100 (\$500,000.00) Dollars of the proceeds realized from the sale of the property to make improvements to Rocky Branch which will further reduce flooding and further improve water quality. These improvements will be made by the Seller after the Buyer has completed improvements to reduce flooding and further improve water quality in Rocky Branch as required of the Buyer in this Agreement of Sale. The type of improvements to be made by the Seller shall be in the Seller's sole and exclusive discretion."

10. Paragraph 25 of the Agreement is deleted in its entirety.

11. The following provisions are added to the Agreement:

- (a) Contributions to Historic Columbia. In addition to the purchase price, Buyer agrees to contribute the sum of Sixty Thousand and No/100 (\$60,000.00) Dollars ("HC Funding") to Historic Columbia for the specific purpose of funding a documentary of Capital City Stadium as well as site preparation and event staffing for an on-site "last tour" event to take place prior to the demolition of the structure. Thirty Thousand and No/100 (\$30,000.00) Dollars shall be funded by Buyer no later than June 30, 2019 and the balance shall be funded no later than August 30, 2019. The HC Funding is nonrefundable to Buyer once paid.
- (b) SSRC Proforma. No later than thirty (30) days after the Amendment Effective Date, Buyer shall provide a project proforma and supporting documentation to identify the anticipated costs associated with the improvements to be supported by the Special Source Revenue Credit ("SSRC") to support the Rocky Branch improvements and construction of the Greenway. Buyer agrees, at Buyer's expense, to make its project team members available to City of Columbia and Richland County staff as needed to ensure there is a complete understanding of the improvements being planned that are intended to be supported by the SSRC. Seller acknowledges that the project proforma shall be subject to modifications as permitting and planning for the planned improvements progresses; provided, however, that no financial assistance other than the SSRC, if approved, will be requested or accepted from the City of Columbia.
- (c) SSRC Approval. Buyer agrees to submit its application for the SSRC to Richland County Council for first reading no later than July 9, 2019. Seller acknowledges that the July 9, 2019

meeting of Richland County Council is a special called meeting and may be subject to cancellation. Consequently, Buyer intends to submit its application for the June 18, 2019 meeting of Richland County Council. Upon City Council approval of the second reading of the 12th amendment, the City will provide written notification to Richland County confirming the PSA extension which includes acknowledgement of the Developer's intent to seek a SSRC from Richland County and the City of Columbia for purposes of supporting the off-site storm water improvements required for the project to proceed. This notification will acknowledge upon approval of First Reading by Richland County, City staff will proceed with placing the item on the next available City Council agenda for approval within the guidelines for the agenda submittals.

- (d) Purchase of SCE&G Property. Buyer is concurrently pursuing from South Carolina Electric & Gas Company ("SCE&G") consent for the assignment to Buyer and modification of that certain Agreement of Sale and Purchase (1031 Exchange Applicable) dated October 4, 2011, as amended between SCE&G and Bright-Meyers Assembly Street, LLC (the "SCE&G Contract") for the purchase and sale of approximately 11.60 acres of land located adjacent to the Property (the "SCE&G Property"). Buyer shall close on its acquisition of the SCE&G Property simultaneously with its Closing on this Property.
- (e) Assignment. The Agreement shall not be assigned or transferred in whole or in part without the prior written consent of the Seller which shall not be unreasonably withheld or delayed. Notwithstanding the forgoing restriction, Buyer may assign this Agreement to a new entity created by Buyer's equity investor in connection with the purchase of the Property provided (i) Buyer provides Seller ten (10) days prior written notice of such assignment, and (ii) such assignment is made not sooner than thirty (30) days prior to closing.
- (f) Earnest Money. Buyer and Seller acknowledge and agree that the Three Hundred Four Thousand and No/100 (\$304,000.00) Dollars Earnest Money paid prior to the Amendment Effective Date is nonrefundable and has been paid to the Seller. The Earnest Money shall be applied as a credit against the Purchase Price at the Closing.
- (g) Rezoning. Buyer shall submit its request to rezone the Property to the City of Columbia no later July 31, 2020 and diligently pursue such rezoning to completion.
- (h) Assurances of Development Capability. Buyer agrees to provide City with monthly updates summarizing all activities undertaken and planned with regard to Buyer's plans to develop the Property as a multifamily development with supporting retail (the "Project"). Such updates shall include, but not be limited to, all meetings with public officials, the status of all permit applications and other entitlements, the status of all architectural plans, engineering plans, flood plain mitigation plans and other design work and studies required for development of the Project. Buyer shall also provide Seller with documents reasonably requested to evidence Buyer's prior experience and success with projects requiring similar entitlements, planning and funding.
- (i) Use of Property. Seller may grant third parties the right to utilize all or a portion of the Property from time to time provided all such agreements are terminated prior to Closing. Buyer shall not be liable for any damages or injuries caused by or resulting from such third parties' use of or entry onto the Property, and the Security Plan may be modified with Seller's approval during the pendency of such parties' use and occupancy. Seller will use commercially reasonable efforts to avoid interference with Buyer's due diligence due to any such use of the Property.
- (j) Notwithstanding anything to the contrary in the Agreement, the Seller reserves the right to require the Buyer to match Seller's funding of the costs of the greenway to Olympia Park, subject to a maximum funding obligation by Buyer of Two Hundred Fifty Thousand and No/100 (\$250,000.00) Dollars.
- (k) Seller reserves the right to remove any items from the Property prior to Closing.

12. The Agreement is hereby reinstated and is in full force and effect as of the date of this Amendment.

The "Amendment Effective Date" shall be the date upon which this Amendment is executed by both Seller and Buyer.

Except as modified and amended hereby, all the terms, covenants and conditions of said Purchase Agreement and subsequent Amendments shall continue and remain in full force and effect insofar as they do not conflict with the terms of this Twelfth Amendment. In the event that the language of the Agreement or a prior Amendment is contrary to the language of this Amendment, the language of this Amendment shall control regarding that provision.

IN WITNESS WHEREOF, the parties have caused this Twelfth Amendment to Purchase Agreement to be executed and effective as of the date of the last signature hereinbelow.

WITNESSES:

SELLER: CITY OF COLUMBIA

BY: _____

Teresa B. Wilson

ITS: City Manager

Date: _____

BUYER: BALLPARK, LLC

BY: _____

Name: _____

ITS: _____

Date: _____

APPROVED AS TO FORM

 Legal Department City of Columbia, SC

Exhibit "A"

Limited Warranty Deed with Covenants

This deed was prepared in the law offices of
BURR FORMAN McNAIR
 Post Office Box 11390
 Columbia, SC 29211
 Attn: Judith L. McInnis

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND)

INDENTURE LIMITED WARRANTY DEED
(With Covenants)

THIS INDENTURE LIMITED WARRANTY DEED (“Deed”) made effective as of the day of the last signature hereinbelow, by and between CITY OF COLUMBIA, SOUTH CAROLINA, (“Grantor”), and BALLPARK, LLC, a South Carolina limited liability company (“Grantee”), having an address at _____; in this Deed, the singular shall include the plural, and plural shall include the singular, and the gender shall include all genders.

FOR AND IN CONSIDERATION of the covenants and conditions hereinafter contained and the sum of Ten and 00/100 Dollars (\$10.00) and other valuable consideration, paid to Grantor at and before the sealing of these presents by the Grantee, in the State aforesaid, the receipt and adequacy whereof is hereby acknowledged, SUBJECT TO easements, restrictions, reservations, agreements, covenants, and conditions set forth below, Grantor has granted, bargained, sold and released and by these presents does grant, bargain, sell and release, unto the said Grantee, the real property described on Exhibit A attached hereto and incorporated herein (hereinafter referred to as the "Property").

The Property is conveyed subject to all matters of record in the Register of Deeds Office for Richland County, South Carolina affecting title, ad valorem property taxes, zoning laws and ordinances, and to all matters that would be revealed by an accurate survey or inspection of the Property.

The Property is conveyed subject to all easements, restrictions, reservations, agreements, covenants and conditions set forth on Exhibit B attached hereto and incorporated herein.

Grantee agrees to observe and perform its obligations as set forth herein.

TOGETHER with all and singular the rights, members, hereditaments and appurtenances to the Property belonging, or in anywise incident or appertaining.

TO HAVE AND TO HOLD all and singular the Property, unto the Grantee, its successors and assigns forever; subject, however, to the easements, restrictions, reservations, agreements, covenants and conditions that constitute covenants running with the land, all as set forth herein above.

Subject to the matters set forth above, Grantor does hereby bind itself to warrant and forever defend all and singular the Property unto Grantee, its successors assigns, from and against Grantor and its successors and assigns, but no others.

IN WITNESS WHEREOF, the Grantor and Grantee have caused this Deed to be executed in their respective names by their duly authorized officers and under seal to be hereto affixed, this _____ day of _____, 2019.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

**CITY OF COLUMBIA,
SOUTH CAROLINA**

Signature of 1st Witness

By: _____
Teresa B. Wilson
City Manager

Signature of 2nd Witness/Notary Public

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND)

ACKNOWLEDGEMENT

I, the undersigned Notary Public, do hereby certify that Teresa B. Wilson, as City Manager of City of Columbia, South Carolina, by and on behalf of City of Columbia, South Carolina, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal this the _____ day of _____, 2019.

Notary Public for South Carolina
Print Name:

My Commission Expires: _____

(NOTARIAL SEAL)

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

BALLPARK, LLC, a South Carolina limited
liability company

Signature of 1st Witness

By: _____

Name: _____

Title: _____

Signature of 2nd Witness/Notary Public

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND)

ACKNOWLEDGEMENT

I, the undersigned Notary Public, do hereby certify that
_____, as _____ of
BALLPARK, LLC, a South Carolina limited liability company, by and on behalf of company,
personally appeared before me this day and acknowledged the due execution of the foregoing
instrument.

Witness my hand and official seal this the _____ day of _____, 2019.

Notary Public for South Carolina

Print Name: _____

My Commission Expires: _____

(NOTARIAL SEAL)

EXHIBIT A

TMS No.: 11204-02-02

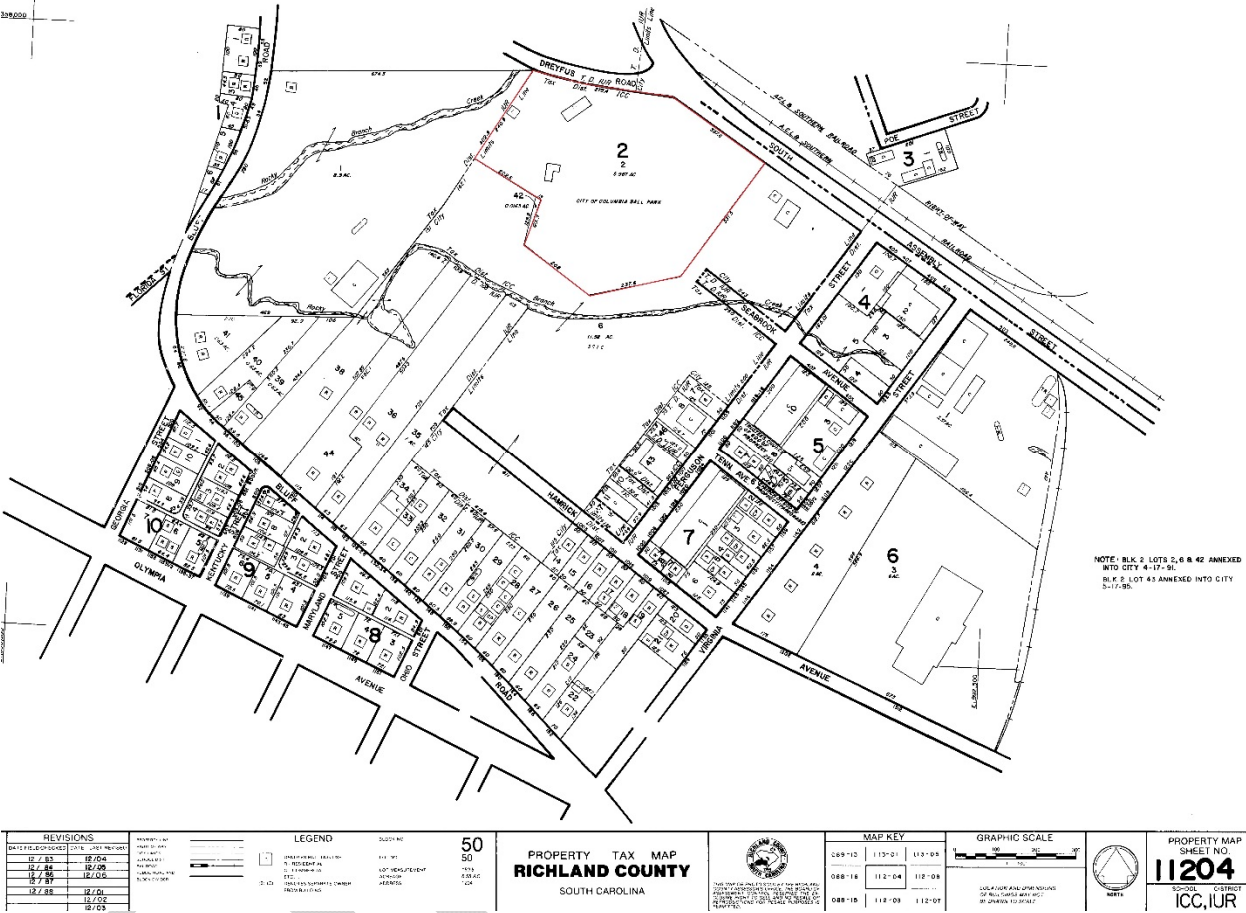


EXHIBIT B

- A. The Property is conveyed subject to the following easements, restrictions, reservations, agreements, covenants and conditions (collectively the “Covenants”):
1. The Property shall be held, developed and operated subject to and as provided in the Commercial Development Guidelines attached hereto and incorporated herein as Exhibit B-1.
 2. The Property shall be held, developed and operated subject to and as provided in the City of Columbia Best Management Practice Design Manual attached hereto and incorporated herein as Exhibit B-2.
 3. The Property shall be held, developed and operated subject to and as provided in the Rocky Branch and Rocky Branch Watershed Improvements attached hereto and incorporated herein as Exhibit B-3.
 4. Grantee shall cause the Property to be cleared of all structures and all debris removed, in accordance with all applicable laws, at the Grantee’s expense, within ninety (90) days of the date of this Indenture Deed.
 5. For and during the period commencing on the date of recording of this Indenture Limited Warranty Deed and ending on that date five (5) years thereafter (the “Restricted Period”), the Property shall at all times, be owned by the individual or entity that owns the property described on Exhibit C attached hereto and incorporated herein (the “Adjacent Property”, and, together with the Property, the “Combined Property”). During the Restricted Period the Combined Property shall not be subdivided, and shall not be sold, conveyed, mortgaged, pledged, or assigned except as one entire parcel.
 6. The Grantee shall commence vertical construction of improvements on the Property no later than June 1, 2020. Vertical construction shall commence with the pouring of footings for such improvements.
 7. Not later than August 20, 2021, the improvements developed and occupied or ready for occupancy on the Property shall contain a minimum of 20,000 SF of street front commercial and retail space.
- B. If the Grantee or its successors and assigns, or any developer, operator, tenant or person/entity in possession of all or any part of the Property (collectively the “Owner/Operator”) fails to comply with all of the Covenants with regard to the portion of the Property owned, leased or otherwise controlled by the Owner/Operator, the Grantor shall provide written notice to the Owner/Operator of such non-compliance and the Owner/Operator shall have thirty (30) days from the date of such notice to take such actions that may be required to cause to the Property to comply with the covenants (or if such corrective actions would reasonably be expected to take longer than thirty (30) days, the

Owner/Operator shall promptly commence such efforts and then diligently pursue such corrective actions to completion). In the event the Owner/Operator fails to undertake such corrective actions in the manner stated above, the Grantor, its successors and assigns, shall, at its option, have the right to

1. Compel compliance with the Covenants by pursuing any action available to the Grantor at law or in equity; and
 2. Assess and collect damages from the Owner/Operator in the amount of \$500 per day during the time such violation of the Covenants or failure to comply with the Request continues.
- C. The Covenants set forth herein and the rights of Grantor to enforce such Covenants are separate and distinct from the laws, regulations, ordinances and requirements of the City of Columbia. Approval, disapproval, waiver or other action pursuant to the Deed by Grantor shall be separate and distinct from, and shall have no bearing on, the laws, regulations, ordinances and requirements of the City of Columbia.
- D. The Covenants may be amended from time to time by recorded instrument executed by Grantor and Grantee.
- E. If any legal action or proceeding is brought by Grantor to enforce any of the Covenants, all reasonable attorneys' fees and costs related thereto incurred by Grantor shall be paid by the Grantee if the Grantor prevails in such action or proceeding.
- F. The provisions in this Deed are intended to be independent. In the event any provisions of this Deed should be declared by a court of competent jurisdiction to be invalid, illegal or unenforceable for any reason whatsoever, such illegality, unenforceability or invalidity shall not affect other provisions of this Deed.
- G. Failure of the Grantor to insist upon compliance with any provision hereof shall not constitute a waiver of the rights of the Grantor to subsequently insist upon compliance with this Deed nor in any way affect the validity of all or any part of this Deed. No waiver of any breach of this Deed shall constitute a waiver of any other or subsequent breach.

Exhibit B-1
Design and Development Guidelines
April ##, 2019

The Property shall be designed and developed in conformance with the Innovista Design Guidelines as amended June 5, 2018 and attached as reference with the following additions and clarifications.

1. **Review.** Review of site, building and overall design of the project shall occur by a committee of city staff consisting of the Director of Planning and Development Services, Planning Administrator, Land Development Administrator, Urban Design Planner, and the City Storm Water Manager. Review and approval shall occur prior to submitting the project to the City of Columbia for development approval.
2. **Architectural Style.** The context, form, layout and design features of the development shall consider urban forms as well as mill structures, and mill villages. Consideration of context shall be considered in relationship to architectural detailing, and materials. Standard suburban and/or marketing/branding Architecture and site design is not acceptable. The entire development shall be designed as unified whole.
3. **Site Design and Relationship to Surrounding Community**
 - a. The Buyer will work with USC and Comet to facilitate the location of a bus stop at the development.
 - b. The entire site shall be designed for pedestrian connectivity.
 - c. A minimum of one pedestrian connection to the site from each public right of way shall be provided for each vehicular access point.
 - d. Pedestrian connections that are adjacent to a vehicular access points or parking areas shall be separated by an average of six (6) feet of green space to be planted with trees.
 - e. Internal pedestrian connections shall interconnect with one another, and shall provide continental painted crosswalks at each point of crossing of vehicular areas.
 - f. Pedestrian areas to rear support functions and other non semi-public areas are not required.
 - g. Pedestrian connections to Bluff Road shall be provided.
 - h. Bicycle facilities shall be provided at a rate of one connection for each vehicular access point provided. Facilities shall be limited to interior circulation routes and not the general parking areas for vehicles.
 - i. Bike facilities shall be provided along Assembly Street per section 5. below.
 - j. Bike facilities and pavement markings shall be analyzed for the intersection of Assembly and Main Entry and shall be based upon final circulation layout and overall design.
 - k. Bike parking layout and racks shall comply with the Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines 2nd Edition or later.

- I. All bike facilities on public and private streets and on access roads adjacent to or within the development shall comply with the National Association of City Transportation Officials Urban Street Design Guide and Urban Bikeway Design Guidelines

4. Lighting.

- a. All lighting shall be full cut off style fixtures to reduce light pollution.
- b. No pole mounted light within the main tenant parking field shall be higher than 35 feet from its mount. The developer shall provide lower poles within smaller parking fields and access drives.
- c. Pedestrian style lighting shall be provided along the entry facades of each structure as well as multi-use paths and sidewalk areas that are not illuminated by parking lot lighting. Pedestrian lighting within the site shall coordinate with the City of Columbia Standard for the downtown area and be full cut off when appropriate.

5. Improvements to the Public Right of way

- a. One standard pedestrian/ road street light, shall be provided parallel to Assembly Street and Dreyfus rights of way per 80 feet of right of way, or as determined by the City Traffic Engineering Department. Lighting style, color, installation and all other specifications shall comply with all City Requirements and coordinate with downtown acorn fixture design or other approved design.
- b. Curb and Gutter shall be provided along Assembly Street and Dreyfus Road and turn the corner at the Ferguson Street intersection.
- c. The Buyer will provide signalization of Ferguson Street and Assembly Street contingent on DOT approval/permitting.
- d. All sidewalks shall comply with all ADA regulations. Crosswalks shall be provided at all intersections meeting requirements by the City Engineer.
- e. A pedestrian sidewalk shall be provided along the rights of way of Assembly Street and Dreyfus Road adjacent to the parcel. Walkways shall have a minimum width of 8 feet
- f. Shade trees shall be provided as single row of trees within a 5 foot-7 foot (7ft max. 5-foot min.) tree lawn. Shade trees shall be provided as a single row of trees between the separated bike facility and the pedestrian sidewalk. Trees alternating pattern. Flexibility as to location do to entries and site conditions may require wider or tighter spacing.
- g. Sidewalk pavement shall consist of a combination of scored concrete paving, and concrete pavers.
- h. Sidewalk areas located near development entrances and intersections shall be paved with concrete pavers and have detailing substantially similar to detailing located at the southwest corner of Assembly Street and Whaley Street.
- i. 8. Tree species shall be of a type that will at maturity canopy approximately 75% of the sidewalk area as shade during summer months.

- j. 9. A separated dedicated bike lane shall be provided parallel to Assembly Street and Dreyfus and shall be designed to allow future north south connections. The separated dedicated bike lane shall have clearly identifiable crossings at intersections or transitions to on road lanes or sharrows. Alternatively, a series of bike lanes, Cycle Tracks, or other bike amenities may be considered by the review committee and the developer at the time of construction or as indicated in the City of Columbia Pedestrian and Bicycle Master Plan draft or adopted document. All bike facilities within the right of way shall comply with NACTO Urban Bikeway Design Guide.

6. Environmental

- a. Stream buffers. The development shall exceed the BMP manual to utilize state of the art techniques to insure water quality is improved, while also complying with the City's Low Impact Development BMP Manual and Stream Buffer language when proposing site design with respect to quality and quantity.
- b. Relocations of streams shall create a naturalized effect through the use of topography, plant life, bank stabilization, and a path that meanders, etc.

EXHIBIT B-2**City of Columbia Best Management
Practice Design Manual**

DRAFT

EXHIBIT B-3**Rocky Branch and Rocky Branch Watershed Improvements**

The Buyer, its successors and assigns, shall make necessary improvements to the Bluff Road railroad embankment, remove the railroad trestle downstream of Olympia Avenue and enlarge the Olympia Avenue culvert crossing to enhance water quality and improve flooding conditions in the area to a degree that is acceptable to the Buyer, Seller, and County and as recommended in the Urban Study of the Rocky Branch Watershed by AMEC Environmental & Infrastructure, Inc. dated June 1, 2012, a copy of which is attached as Exhibit B-4 hereto and incorporated herein by specific reference thereto and as set forth in the motion approved by Columbia City Council on June 5, 2012, a copy of which is attached hereto as Exhibit ## and incorporated herein by specific reference thereto.

Buyer, Seller, and the County shall work together to create the optimum flooding, drainage, and water quality situation from Assembly street to the Congaree River. In addition to the three improvements specifically set forth in the previous paragraph, the Buyer shall facilitate and pay for all surveying, plans, permitting, and design of the improvements. In addition, the Buyer shall use its best efforts to perform any mitigation required by DHEC or the Army Corp of Engineers, for the Buyer's relocation of the onsite stream, within Rocky Branch.

EXHIBIT B-4**Urban Study
Rocky Branch Watershed**

DRAFT

EXHIBIT B

- A. The Property is conveyed subject to the following easements, restrictions, reservations, agreements, covenants, conditions (collectively the “Covenants”) and the following reversions and rights of re-entry (the “Reverter”):
1. The Property shall be held, developed and operated subject to and as provided in the Commercial Development Guidelines attached hereto and incorporated herein as Exhibit B-1.
 2. The Property shall be held, developed and operated subject to and as provided in the City of Columbia Best Management Practice Design Manual attached hereto and incorporated herein as Exhibit B-2.
 3. The Property shall be held, developed and operated subject to and as provided in the Rocky Branch and Rocky Branch Watershed Improvements attached hereto and incorporated herein as Exhibit B-3.
 4. The Property is subject to a right of reversion and re-entry running in favor of Grantor providing that if any of the Covenants is violated and Grantor records notice of such violation in the Richland County, South Carolina Register of Deeds Office, the Grantor shall be entitled to enter upon and take possession of the Property and title to the Property shall then immediately revert to, and rest in, Grantor, free and clear of all liens and encumbrances not existing on the date of this Deed, without the necessity of any further action by Grantor or Grantee. If the Reverter is triggered, Grantor, at its option, may request (“Request”) confirmation thereof by a reconveyance of the Property from Grantee to Grantor, with such reconveyance to occur by limited warranty deed, free and clear of all liens and encumbrances not existing on the date of this Deed, and no later than thirty (30) days after the Request. All closing costs of such reconveyance pursuant to the Reverter typically paid by the seller of real property in Richland County, South Carolina, shall be paid by the Grantee. Notwithstanding the foregoing, any reconveyance is merely confirmatory and is not required in order for title to the Property to vest in Grantor pursuant to the Reverter.
 5. The Property shall be cleared of all structures, at the Grantees expense, within ninety (90) days of closing.
- B. If the Grantee or its successors and assigns, or any developer, operator, tenant or person/entity in possession of all or any part of the Property (collectively the “Owner/Operator”) fails to comply with all of the Covenants or with the Request, the Grantor, its successors and assigns, shall, at its option, have the right to:
1. Assess and collect damages from the Owner/Operator in the amount of \$1,000 per day during the time such violation of the Covenants or failure to comply with the Request continues;

2. Repurchase the Property from Owner for a price of \$1,121,000.00 dollars, with the Property to be in the same condition as, and have no title exceptions other than those existing, on the date of this Deed. All closing costs associated with such repurchase shall be paid by the Owner including but not limited to attorneys' fees of Owner and Grantor, deed stamps/deed recording fees, recording costs, survey, and title insurance. Taxes to the date of such repurchase shall be paid by Owner. Closing shall occur, at Grantor's option, no later than sixty (60) days after notice from Grantor to Owner that Grantor is repurchasing the Property. Any liens or encumbrances on the Property not existing on the date of this Deed shall be removed, satisfied and released at Owner's expense; sales proceeds shall be utilized to so remove such liens and encumbrances; and
 3. Compel performance of the Covenants and/or the Request by specific performance or other legal proceeding.
- C. The Covenants set forth herein and the rights of Grantor to enforce such Covenants are separate and distinct from the laws, regulations, ordinances and requirements of the City of Columbia. Approval, disapproval, waiver or other action pursuant to the Deed by Grantor shall be separate and distinct from, and shall have no bearing on, the laws, regulations, ordinances and requirements of the City of Columbia.

EXHIBIT B-1

Commercial Development Guidelines

The Property shall be designed and developed in conformance with the Innovista Design Guidelines as amended June 5, 2018 and attached as reference with the following additions and clarifications.

- 1. Review.** Review of site, building and overall design of the project shall occur by a committee of city staff consisting of the Director of Planning and Development Services, Planning Administrator, Land Development Administrator, Urban Design Planner, and the City Storm Water Manager. Review and approval shall occur prior to submitting the project to the City of Columbia for development approval.
- 2. Architectural Style.** The context, form, layout and design features of the development shall consider urban forms as well as mill structures, and mill villages. Consideration of context shall be considered in relationship to architectural detailing, and materials. Standard suburban and/or marketing/branding Architecture and site design is not acceptable. The entire development shall be designed as unified whole.
- 3. Site Design and Relationship to Surrounding Community**
 - a. There will be no truck access from the site to Bluff Road, and the City of Columbia will consider traffic mechanisms that will limit through traffic and use of the area as an alternate route for railroad related traffic. The site will include a driveway and pedestrian access to Bluff Road to integrate the development into the Olympia Community.
 - b. The Buyer will work with USC and Comet to facilitate the location of a bus stop at the development.
 - c. The entire site shall be designed for pedestrian connectivity.
 - d. A minimum of one pedestrian connection to the site from each public right of way shall be provided for each vehicular access point.
 - e. Pedestrian connections that are adjacent to a vehicular access points or parking areas shall be separated by an average of six (6) feet of green space to be planted with trees.
 - f. Internal pedestrian connections shall interconnect with one another, and shall provide continental painted crosswalks at each point of crossing of vehicular areas.
 - g. Pedestrian areas to rear support functions and other non semi-public areas are not required.
 - h. Pedestrian connections to Bluff Road shall be provided.
 - i. Bicycle facilities shall be provided at a rate of one connection for each vehicular access point provided. Facilities shall be limited to interior circulation routes and not the general parking areas for vehicles.
 - j. Bike facilities shall be provided along Assembly Street per section 5. below.
 - k. Bike facilities and pavement markings shall be analyzed for the intersection of Assembly and Main Entry and shall be based upon final circulation layout and overall design.
 - l. A bike trail connection shall be provided from Bluff Road to Assembly Street and shall comply with best practices for trails providing for two-way traffic.
 - m. Bike parking layout and racks shall comply with the Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines 2nd Edition or later.

- n. All bike facilities on public and private streets and on access roads adjacent to or within the development shall comply with the National Association of City Transportation Officials Urban Street Design Guide and Urban Bikeway Design Guidelines

4. Lighting.

- a. All lighting shall be full cut off style fixtures to reduce light pollution.
- b. No pole mounted light within the main tenant parking field shall be higher than 35 feet from its mount. The developer shall provide lower poles within smaller parking fields and access drives.
- c. Pedestrian style lighting shall be provided along the entry facades of each structure as well as multi-use paths and sidewalk areas that are not illuminated by parking lot lighting. Pedestrian lighting within the site shall coordinate with the City of Columbia Standard for the downtown area and be full cut off when appropriate.

5. Improvements to the Public Right of way

- a. One standard pedestrian/ road street light, shall be provided parallel to Assembly Street and Dreyfus rights of way per 80 feet of right of way, or as determined by the City Traffic Engineering Department. Lighting style, color, installation and all other specifications shall comply with all City Requirements and coordinate with downtown acorn fixture design or other approved design.
- b. Curb and Gutter shall be provided along Assembly Street and Dreyfus Road and turn the corner at the Ferguson Street intersection.
- c. The Buyer will provide signalization of Ferguson Street and Assembly Street contingent on DOT approval/permitting.
- d. All sidewalks shall comply with all ADA regulations. Crosswalks shall be provided at all intersections meeting requirements by the City Engineer.
- e. A pedestrian sidewalk shall be provided along the rights of way of Assembly Street and Dreyfus Road adjacent to the parcel. Walkways shall have a minimum width of 8 feet
- f. Shade trees shall be provided as single row of trees within a 5 foot-7 foot (7ft max. 5-foot min.) tree lawn. Shade trees shall be provided as a single row of trees between the separated bike facility and the pedestrian sidewalk. Trees alternating pattern. Flexibility as to location do to entries and site conditions may require wider or tighter spacing.
- g. Sidewalk pavement shall consist of a combination of scored concrete paving, and concrete pavers.
- h. Sidewalk areas located near development entrances and intersections shall be paved with concrete pavers and have detailing substantially similar to detailing located at the southwest corner of Assembly Street and Whaley Street.
- i. 8. Tree species shall be of a type that will at maturity canopy approximately 75% of the sidewalk area as shade during summer months.
- j. 9. A separated dedicated bike lane shall be provided parallel to Assembly Street and Dreyfus and shall be designed to allow future north south connections; such bike way shall connect to the Rocky Branch Creek Greenway. The separated dedicated bike lane shall have clearly identifiable crossings at intersections or transitions to on road lanes or sharrow. Alternatively, a series of bike lanes, Cycle Tracks, or other bike amenities may be considered by the review committee and the developer at the time of construction or as indicated in the City of Columbia Pedestrian and Bicycle Master Plan draft or adopted document. All bike facilities within the right of way shall comply with NACTO Urban Bikeway Design Guide.

6. Environmental

- a. Stream buffers. The development shall exceed the BMP manual to utilize state of the art techniques to insure water quality is improved, while also complying with the City's Low Impact Development BMP Manual and Stream Buffer language when proposing site design with respect to quality and quantity.
- b. Relocations of streams shall create a naturalized effect through the use of topography, plant life, bank stabilization, and a path that meanders, etc.

DRAFT

EXHIBIT B-2

City of Columbia Best Management Practice (BMP) Design Manual

Prepared for:



The City of Columbia, Utilities and Engineering Department
Columbia, South Carolina

Prepared by:



**AMEC Environment and Infrastructure, Inc.
720 Gracern Road
Columbia, SC 29210**

**Date Revised:
January 10 2014**

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A. Design Aids

- Calculation Worksheets
 - Volume Calculation Tool
 - BMP Sizing Tools for:
 - Bioretention
 - Infiltration Trench
 - Dry Enhanced Swale
 - Grass Filter Strip
 - Porous Surfaces
- Standard CAD Details and Notes/Specs
 - Bioretention
 - Infiltration Trench
 - Dry Enhanced Swale
 - Grass Filter Strip
 - Micropool Extended Dry Detention Pond
 - Wet Detention Pond

B. Maintenance Schedules

Chapter 1 – Stormwater Design Requirements

This chapter provides engineers, designers, developers, and others with the necessary information to assist with the development of systems that will control the rate, volume, and pollutants released from a new or re-development project. The City of Columbia Utilities and Engineering Department's Stormwater Division (SWD) has been authorized by law or agreement to enforce these design requirements. These design requirements are based on Best Management Practices and reference State and Federal regulations, engineering publications, and other municipal and academic guidance.

It is an overall goal of this Manual to provide a set of design standards that will result in effective stormwater management. The goal is to mitigate the impact of land development on existing/natural hydrologic and hydraulic processes, as well as attempt to prevent further degradation of the water resources in the City of Columbia through proper planning and design. The design professional is encouraged to use all means necessary to develop land in a manner consistent with City Ordinances, Engineering Regulations, and this Manual and to ensure the safety of the general public. Specific methods and applications not covered in this section must be discussed with the SWD for applicability.

NOTE: In addition to the content included in this manual, the Georgia Stormwater Management Manual (GSMM) will also be utilized, which uses the same methodology – specific GSMM sections to be used are cited with links to those specific sections throughout the document.

The following process (Figure 1.1) will be described in detail throughout this Manual, and will be the basis for compliance with the City of Columbia stormwater requirements:

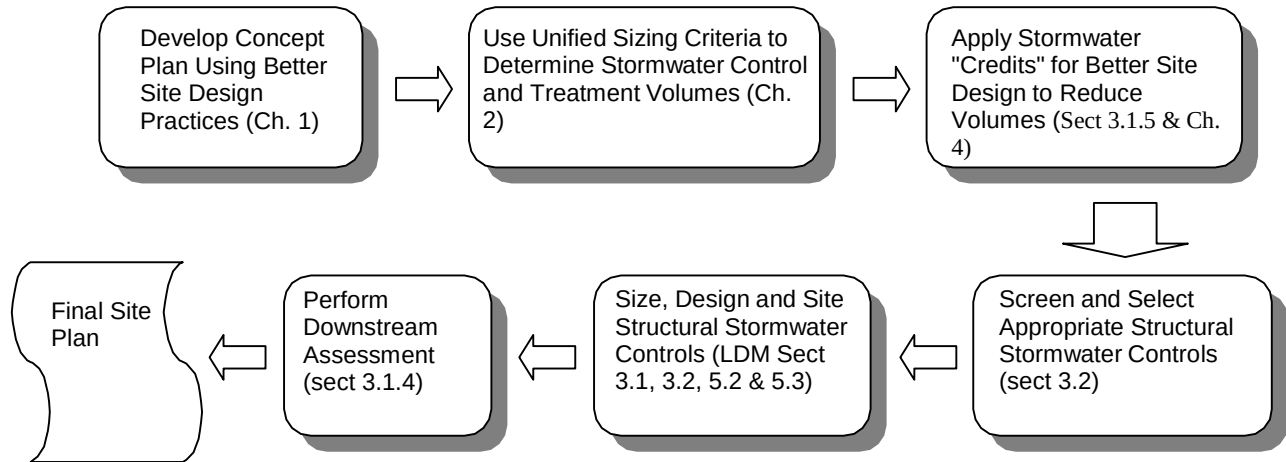


Figure 1.1 – Stormwater Compliance Process

1.1 General Requirements

General requirements for all stormwater systems will include, but not limited to the following:

1. The Uniform Sizing Criteria (USC) will be used as described in this Manual to address:
 - a. The Water Quality Volume (WQv)
 - b. The Channel Protection Volume (CPv)
 - c. Impacts from overbank and extreme flooding events (2- through 100-year)
 - d. Avoiding downstream water quality or quantity impacts
 - e. Applying proper volume “credits” to a site design
 - f. The specific design and performance requirements for each allowable BMP
2. All privately owned stormwater facilities shall have a maintenance agreement. This notarized covenant is to be recorded with the Register of Deeds in the City of Columbia.
3. Re-development is typically governed by the same design criteria as new developments, however the SWD reserves the right to alter (increase or decrease) the requirements for redevelopment to address specific conditions of the site or the receiving watershed.
4. All post-development BMPs must be protected from erosion and sedimentation during the construction phases; a final inspection by the City will be required to determine if additional action is needed to remove sediment deposits from post-construction BMPs. See Section 21-44 of the Stormwater Quantity and Quality Control Ordinance for further maintenance, construction, inspection and Notice of Termination (NOT) requirements for activities under a land disturbance permit. In cases where other City or SCDHEC sediment prevention and erosion control regulations are applicable, the most restrictive requirements will be adhered to.
5. An assessment of the presence/absence of wetlands/Waters of the State shall be performed on all sites by a qualified professional. If wetlands/Waters of the State are suspected to exist on a property, they shall be investigated and delineated by a qualified professional. If wetlands are to be impacted, the City will not issue a Land Disturbance Permit without a confirmation or denial letter from the US Army Corps of Engineers (USACE).
6. All stormwater management and sediment control practices shall be designed, constructed, and maintained with consideration for the proper control of mosquitoes and other vectors.
7. The entire watershed that drains to a particular design point shall be included in determining the appropriate design storm. All drainage systems regardless of size or classification (see sections 1.1.7 a-d below and the City of Columbia’s Utilities and Engineering Regulations for their Drainage Ordinance) shall be analyzed and designed as necessary to safely pass the 100-year storm event to avoid the likelihood of dwelling flooding, property damage or public access and/or utility interruption.

Example 1: a residential stormwater drainage system is required to collect and convey flows from a 10-year event. However, the designer estimated the depth of flow across roadways and other surfaces during a 100-year event, which were in excess of those that catch basins and inlets could collect and convey, but would ultimately be

directed to the receiving stormwater pond (or waterway). Those depths of flow, for the entire site, were determined to be below those that would cause flooding (or other damages) to neighboring/adjacent properties or cause an impediment to public access and/or utility interruption. Therefore, this system safely passes the 100-year storm event.

All computations shall be based on the contributing watershed, not just the project area or disturbed area. Classification of stormwater systems are as follows according to Part 4 of the City's Utilities and Engineering Regulations' Drainage Ordinance (Sec. 6-5004), and will be addressed in addition to satisfying the Unified Stormwater Sizing Criteria:

a. Minor Drainage Systems: 0 - <40 Acres

All drainage systems, excluding ponds that carry less than 40 acres of stormwater runoff shall be designed to carry flows resulting from a ten (10) - year storm event. Ditches and channels shall be provided to carry the runoff from a rain of fifty (50) year frequency with protection against channel erosion.

b. Collector Systems: 40 - <500 Acres

All drainage systems, excluding ponds, that carry at least 40 acres but less than 500 acres shall be designed to carry flows resulting from a twenty-five (25) - year storm event.

c. Major Drainage Systems: 500 and more Acres

All drainage systems, excluding ponds, that carry at least 500 and more acres shall be designed to carry a flow resulting from a fifty (50)-year storm event. Encroachment upon Major Drainage Channels and the adjacent overflow land shall be avoided to the maximum extent possible.

d. City or FEMA Floodplains: 640 and more Acres

Bridges and culverts being constructed in natural channels, creeks, or rivers draining more than 640 acres, shall be designed to carry a flow resulting from a one-hundred (100)-year storm event. Bridges and culverts shall be sized to accommodate a 50-year frequency rain fall, without increasing the depth of flow in the channel. Design of bridges and culverts shall conform to the current South Carolina State Highway Department construction specifications. Encroachment upon these channels shall be avoided to the maximum extent practicable, and new encroachments into an established floodway (excluding bridge piers) shall be avoided.

The Floodplain provisions in Part 22 of the City Utility and Engineering Regulations Manual shall apply, where applicable, to drainage systems which drain 640 or more acres.

1.2 Special Protection Areas

In an effort to address some of the most critical water resource problems that exist in the City, Special Protection Areas can be established. Those wishing to develop or redevelop lands within these protected areas will be required to comply with the minimum standards listed in the preceding sections (i.e. The Unified Stormwater Sizing Criteria) as well as a more stringent set of design criteria detailed below. These generally focus on either a water quantity or a water quality problem. For more information on areas to be considered as Special Protection Areas, contact Richland County.

1.2.1 Flooding Problem Areas

Flooding problem areas exist in locations around the City where development densities have increased to the point that stormwater controls have become overwhelmed, or where controls were never adequately designed or installed to control runoff (see map located at in Appendix C). In an effort to relieve existing flooding problems, the following list of design criteria will be required in designated areas. These areas are expected to change with time. The requirement in conjunction with the enforcement of other design criteria listed in the sections above, are expected to assist in reducing these problem areas.

1. The post-development, peak discharge rates is restricted to $\frac{1}{2}$ the pre-development rates for the 2, 5, 10 and 25-year storm events or to the downstream system capacity, whichever is less.
2. When deemed appropriate, the City's SWD can require that the limits of flooding under a 100-year event be established on the site, regardless of drainage area. If such a requirement is enacted by the SWD, a hydraulic modeling methodology consistent with FEMA studies will be used.
3. When deemed appropriate, the City's SWD can require that a downstream hydrologic (and/or hydraulic) analysis be performed to assess potential impacts to receiving properties and stormwater systems under a 100-year event, due to altered timing of released stormwater discharges (See Section 3.1.4). If such a requirement is enacted by the SWD, a hydrologic (and/or hydraulic) modeling methodology consistent with FEMA studies will be used. A more detailed discussion of this analysis is provided in [Section 2.1.9 of the GSMM](#).

Additional criteria may be established on a case by case basis.

1.2.2 Areas Associated with TMDLs and Impaired Waterbodies

In conjunction with the NPDES permitting program, SCDHEC, through delegated responsibility from EPA, must identify and mitigate impaired waterbodies. Impaired waterbodies are identified through a monitoring program, the results of which are compared against water quality standards developed to protect designated uses of individual waterbodies. Waterbodies that are not meeting water quality standards cannot be designated as fishing, swimming, recreation, and/or aquatic life areas. In accordance with Section 303 of the Clean Water Act states must release a

bi-annual report of impaired waterbodies. Waters listed on the 303(d) list will eventually have a TMDL developed, which represents the daily amount of a particular pollutant that a waterbody can receive and still meet the water quality standard for its designated use(s).

City of Columbia's 303(d) listed waters can be found at:

http://www.scdhec.gov/environment/water/tmdl/docs/tmdl_10-303d.pdf

For projects discharging to a 303(d) listed water the pollutant load reduction required along with the structural and non-structural BMPs that will be utilized to achieve that load reduction will be required to prevent further degradation. Water quality calculations must be provided to show that discharges from the site will not further degrade water quality. Procedures can be found in Section 2.4.3.

If a waterbody has an established TMDL the SWD will require that a plan be implemented that uses structural and nonstructural BMPs to reduce the current loading to either a certain total load or by a percentage. The plans to address the TMDLs will contain provisions for both existing and future land uses. TMDL waters in City of Columbia can be found at: http://www.scdhec.gov/environment/water/tmdl/docs/tmdl_10-303d.pdf.

Those areas affected will change as additional TMDLs are adopted, and it is the designer's responsibility to check for updated information from SCHDEC.

TMDL and 303(d) requirements listed in Section 2.4.3 only apply if the development project discharges a pollutant of concern based on the land use. For residential properties the applicable pollutants of concern include bacteria, sediment, dissolved oxygen and nutrients. For commercial properties the applicable pollutants of concern include, heavy metals, bacteria, dissolved oxygen and sediment.

Note: while dissolved oxygen (DO) is not considered a "pollutant", it is a measure of stream health/impairment. If a stream is impaired for low DO, the specific pollutants that can lead to low DO levels will be addressed.

1.2.3 Critical Water Bodies

Rocky Branch Creek, Smith Branch, Gills Creek, and Pen Branch are vital water resources for the City of Columbia, providing a vast habitat for aquatic life. Criteria listed below, in addition to the requirements detailed in this Manual, will be enforced for all new development and re-development projects near these water bodies. These design requirements shall specifically apply to stormwater runoff from all new development and re-development projects that is discharged to these water bodies.

The specific design requirements are as follows:

1. Water Quality:
 - a. All sites which disturb greater than one acre shall have a permanent water quality BMP in place to treat at least the runoff from the entire site for a 1.2-inch rainfall event. The Unified Stormwater Sizing Criteria method shall be used to determine the

- water quality volume (WQv), as described in Chapter 2. This volume shall be released for a minimum period of 24-hours when a detention pond is used. For other BMPs that address water quality, the design criteria provided in Sections 3.2-3.4 of the GSMM will be followed.
- b. All sites which disturb greater than one acre shall have a permanent water quality BMP in place to treat the Channel Protection Volume, which is associated with the 1-year storm event. The Unified Stormwater Sizing Criteria method shall be used to determine the channel protection volume CPv), as described in Chapter 2. This volume shall be released for a minimum period of 24-hours when a detention pond is used. For other BMPs which have the ability to address the channel protection volume, the design criteria provided in [Sections 3.2-3.4 of the GSMM](#) will be followed.
 - c. Due to lake boundary topography, it may be impractical to route all impervious areas to a water quality BMP. In such cases, exemptions for roof area and sidewalks may be allowed with documentation that every effort was made to route impervious areas to water quality BMPs to the maximum extent technically feasible. However, the water quality volume in the BMP must reflect that from the disturbed portion of the site (i.e. runoff from a 1.2-inch rainfall event). In no cases are roads and parking areas exempt. Area-weighting will be used to determine the net treatment for the water quality and channel protection volumes. Specific examples on how to qualify for credits that reduce the WQv and CPv requirements are provided in Chapter 4 of this document.
 - d. A pretreatment device such as a forebay, micro-pool, filter strips or vault, to remove debris and large sediments shall be constructed either as part of the water quality BMP or as a separate device. Specific sizing requirements, as provided in the GSMM, shall be followed.
 - e. Developments with a commercial land use or a parking lot which exceeds 2,000 ft² must include the ability to capture hydrocarbons either in pretreatment or in the main BMP(s).
2. Erosion Prevention:

All discharge points shall include energy dissipation features which reduce velocity to a non-erosive state of 5 fps for clay and 2.5 fps for sand unless site conditions warrant further evaluation. The use of level spreaders to dissipate energy and create a sheet flow discharge pattern is preferred over a single, large discharge pipe/channel. All energy dissipation measures shall be installed above the 360-foot elevation contour.

1.3 Better Site Planning

Through stormwater better site design practices and techniques, it is possible to reduce the amount of runoff and pollutants generated. Better site design concepts can be viewed as both water quantity and water quality management tools and can reduce the size and cost of required structural stormwater controls. The site design approach can better mimic the natural hydrologic conditions of the site, have a lower maintenance burden and provide for more sustainability. Better site design includes:

- Conserving natural features and resources
- Using lower impact site design techniques
- Reducing impervious cover
- Utilizing natural features for stormwater management

For each of the above categories, there are a number of practices and techniques that aim to reduce the impact of urban development and stormwater runoff from the site. These better site design practices are described in detail in Section 1.3.

For several of the better site design practices, there is a direct economic benefit to their implementation for both stormwater quality and quantity through the application of site design “credits.” In terms of the unified stormwater sizing criteria, Table 1.1 shows how the use of nonstructural site design practices can provide a reduction in the amount of stormwater runoff required to be treated and/or controlled through the application of site design credits.

Table 1.1 Reductions or “Credits” to the Unified Stormwater Sizing Criteria through the Use of Better Site Design Practices	
Sizing Criteria	Potential Benefits of the Use of Better Site Design Practices
Water Quality (WQ _V)	• Better site design practices that reduce the total amount of runoff will also reduce WQ_V by a proportional amount. • Certain site design practices will allow for a further reduction to the Water Quality Volume. The site design credits are discussed in Section 3.8.
Channel Protection, Overbank Flood Protection, and Extreme Flood Protection (CP _V , Q _{FP} , Q ₁₀₀)	• The use of better site design practices that reduce the total amount of runoff will also reduce CP_V, Q_{FP}, and Q₁₀₀ by a proportional amount. • Floodplain preservation may allow waiving of overbank flood and/or extreme flood protection requirements.

1.3.1 Stormwater Better Site Design

The first step in addressing stormwater management begins with the site planning and design process. By implementing a combination of these nonstructural approaches (aka: better site design practices), it is possible to reduce the amount of runoff and pollutants a site generates from a site and provide for some nonstructural on-site treatment and control of runoff. The goals of better site design include:

- Managing stormwater (quantity and quality) as close to the point of origin as possible and minimizing collection and conveyance
- Preventing stormwater impacts rather than mitigating them
- Utilizing simple, nonstructural methods for stormwater management that are lower cost and lower maintenance than structural controls
- Creating a multifunctional landscape
- Using hydrology as a framework for site design

The aim of better site design is to reduce the environmental impact “footprint” of the site while retaining and enhancing the owner/developer’s purpose and vision for the site. Many of the better site design concepts can reduce the size and cost of necessary drainage infrastructure and structural stormwater controls while maintaining or even increasing the value of the property.

Several of the site design practices described in this section provide a calculable reduction or site design “credit” which can be applied to the unified stormwater sizing criteria requirements. The use of stormwater better site design can also have a number of other ancillary benefits including:

- Reduced construction costs
- Increased property values
- More open space for recreation
- More pedestrian friendly neighborhoods
- Protection of sensitive forests, wetlands and habitats
- More aesthetically pleasing and naturally attractive landscape
- Easier compliance with wetland and other resource protection regulations

1.3.2 List of Stormwater Better Site Design Practices and Techniques

The stormwater better site design practices and techniques allowed for in this Manual are grouped into four categories and are listed below:

- Conservation of Natural Features and Resources
 - Preserve Undisturbed Natural Areas
 - Preserve Riparian Buffers
 - Avoid Floodplains

- Avoid Steep Slopes
- Minimize Siting on Porous or Erodible Soils
- Lower Impact Site Design Techniques
 - Fit Design to the Terrain
 - Locate Development in Less Sensitive Areas
 - Reduce Limits of Clearing and Grading
 - Utilize Open Space Development
 - Consider Creative Development Design
- Reduction of Impervious Cover
 - Reduce Roadway Lengths and Widths
 - Reduce Building Footprints
 - Reduce the Parking Footprint
 - Reduce Setbacks and Frontages
 - Use Fewer or Alternative Cul-de-Sacs
 - Create Parking Lot Stormwater "Islands"
- Utilization of Natural Features for Stormwater Management
 - Use Buffers and Undisturbed Areas
 - Use Natural Drainage ways Instead of Storm Sewers
 - Use Vegetated Swale Instead of Curb and Gutter
 - Drain Rooftop Runoff to Pervious Areas

More detail on each site design practice is provided in the Stormwater Better Site Design Practice Summary Sheets in [subsection 1.4.2 of the GSMM](#). These summaries provide the key benefits of each practice, examples and details on how to apply them in site design. Site design should be done in unison with the design and layout of stormwater infrastructure in attaining stormwater management goals. Figure 1.2 illustrates the stormwater better site design process that utilizes the four better site design categories.

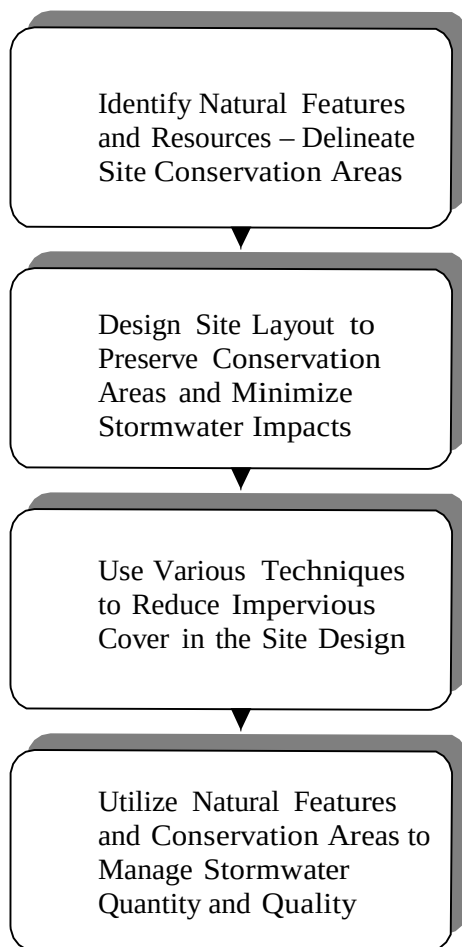


Figure 1.2 - Stormwater Better Site Design Process

1.4 Water Quality Control Requirements

Water quality control is an integral and required component of overall stormwater management systems to preserve the water resources of City of Columbia. New development and re-development projects must include controls that treat or otherwise limit the discharge of pollutants. These requirements are due to State and Federal requirements. Because this is a requirement of stormwater design, this section provides background information, references, and design standards addressing water quality. This section will utilize the better site design methods described in Section 1.3, as well as the credits described in Chapter 4, to reduce the volumes that must be treated.

Note: The designer must also comply with the buffer requirements described in [Section 21-46. - Watercourse Protection of the City's Stormwater Ordinance](#) where the City buffer requirements may differ from those required by SCDHEC in the NPDES Construction General Permit (CGP), the more restrictive buffer requirements (i.e. larger) will be required.

1.4.1 Design Requirements

The following design criteria are established for water quality control and shall be incorporated by the use of BMPs for a given project area unless a specific water quality waiver is granted by the City's SWD. Incorporation of these requirements shall constitute adequate control of the discharge of the pollutants of concern.

1. All projects requiring a land disturbance permit, as defined in the City Stormwater Ordinance (Section 21-40/43), shall have permanent water quality BMPs installed according to the criteria listed in Chapter 2. Stormwater discharges to special protection areas with sensitive resources are subject to additional performance criteria (See Section 1.2).
2. Permanent water quality ponds and water quality structures having a permanent pool elevation shall be designed to store the runoff from the contributing area of the site from a 0.6-inch rainfall event, and release the accumulated water quality volume (WQv) over a minimum period of 24-hours.
3. Permanent water quality structures not having a permanent pool elevation shall be designed to store the runoff from the contributing area of the site from a 1.2-inch rainfall event, and release the accumulated WQv over a minimum period of 24-hours.
4. Engineered devices that are designed to treat the runoff volume from a project area may be substituted for a permanent water quality pond, if appropriate.
5. BMPs used for water quality shall have a pretreatment device as part of the BMP or treatment system. Options include forebays, vaults, or other devices that remove debris and coarser sediments from the drainage system.
 - a. Forebays shall be placed inside the main pond area or upstream of the main storage pond area.

- b. Unless a separate vault is to be used for the forebay, the forebay shall be separated from the larger detention area by barriers or baffles that may be constructed of earth, stones, riprap, gabions, or geotextiles. The barrier and/or baffles act as a trap for coarse sediments and minimize their movement into the main pond.
 - c. Maintenance of forebays will be needed more frequently than the main storage area and all designs, maintenance schedules must consider this need.
 - d. Forebays shall be sized to provide a volume for 0.1-inches of runoff from impervious surfaces,
6. Projects that discharge either directly or indirectly into an impaired waterbody as determined by the existence of an adopted TMDL by SCDHEC or through SCDHEC's listing of the waterbody on the latest 303(d) list shall be required to reduce pollutant loads so as to meet applicable water quality standards or other criteria listed in an adopted TMDL, such as percent reductions. More background information is covered in Section 1.2.2. This will require the installation and implementation of measures which are expected to adequately reduce pollutant loads to levels required by the TMDL or prevent future impairments as required by the current 303(d) list.
 - a. If the site disturbs less than 25 acres, an evaluation of the BMPs chosen to control the release of pollutants must be provided. Such evaluations may reference published values on BMP effectiveness or provided in Appendix A.
 - b. If greater than 25 acres, a comprehensive quantitative and qualitative analysis shall be provided, and include at a minimum calculations that show:
 - A site's pollutant load for all pollutants of concern (see Table 1.2),
 - The trapping effectiveness of the chosen BMPs based on City rainfall statistics and soil types, and
 - The runoff discharged through the last water quality BMP shall have a water quality level equal to or better than the in-stream standard. Standards are listed in the table below. If an adopted TMDL is in place for the receiving water, calculations must show pre- and post-BMP loads and percent reduction achieved.
7. All BMPs must have a maintenance plan. Example maintenance agreements are included in the appendix.
8. A credit system is available from the SWD that offers alternatives on how a site meets these water quality requirements (Chapter 4). However, S.C. DHEC minimum stormwater criteria must be met.
9. The SWD reserves the right to require specific effluent limits for any pollutant from a site if necessary to ensure the water quality standards and other local, State, and Federal water quality regulations are met. The SWD also reserves the right to not allow credits at certain sites.

10. Annual groundwater recharge rates must be maintained to the maximum extent practical by promoting infiltration through the use of structural and non-structural methods.
11. Literature, signage, or other documentation shall be provided to owners and HOAs to educate and train themselves on the impact they can have on water quality and the activities necessary to maintain structural controls, as appropriate. These efforts are particularly critical in LID designs.

Table 1.2: SCDHEC/USEPA Water Quality Standards

Pollutant	Standard
*Bacteria	200 CFU/100-mL
Total Nitrogen	1.5 mg/L
Total Phosphorus	0.06 mg/L
TSS	80% reduction or 0.5 mg/L
Metals	See SCDHEC Reg. 61-68

*Impairment is based on 10%-exceedances of 400 CFU/100-mL

1.4.2 General Design Procedures

If the proposed project does **not** discharge to a receiving water that is either impaired (303(d) listed) or has an adopted TMDL, stormwater treatment is achieved through addressing the USC. Use Table 1.2 to determine the pollutants of concern based on the proposed land use or disturbing activity. Then use Appendix A to help select BMPs to treat the pollutants of concern. The design of all BMPs must follow the process described below:

1. Calculate the water quality volumes using the USC equations in Chapter 2
2. Look for opportunities to reduce runoff through better site design (See Section 1.3)
3. Identify crediting opportunities for reduced volumes identified in Step 2 (See Chapter 4)
4. Review BMP suitability (See Section 3.2.7)
5. Perform BMP sizing calculations ([See GSMM Section 3.2-3.4](#))
6. Compute stage-storage and stage-discharge relationships of the outlet control structure(s).
7. Repeat Steps 2-6 until initial design criteria is met
8. Check for treatment train (i.e. a series of BMPs) efficiency as needed (See Section 3.2.8)
9. Check for downstream impacts (See Section 3.1.4), revise the design as needed
10. Check for opportunities to reduce peak discharges due to WQv (See Section 3.1.5)
11. Repeat Steps 5-10, as needed, until final criteria is met
12. Design off-line diversions as needed (See Section 3.2.9)

Note: For engineered devices, alternative calculations other than detailed here must be provided. SCDHEC has accepted some such devices as providing adequate treatment.

1.4.3 Design Procedures for Impaired Waters and TMDLs

If the receiving water of the project is impaired (303(d) listed) or has an adopted TMDL, in addition to the design procedures in Section 1.4.2, the applicant must show some additional calculations of the BMPs to treat stormwater runoff. For 303(d) listed impaired waters, water quality calculations must be provided that show that discharges from the site will not further degrade water quality. This analysis must be quantitative and qualitative. The most up to date information in impaired water and adopted TMDLs is available from SCDHEC's website. The appropriate steps include:

Determine if the site discharges to a receiving water that is impaired (303(d) list) or has an adopted TMDL(s). A list of the City's 303(d) listed waters and TMDLs can be found at:

http://www.scdhec.gov/environment/water/tmdl/docs/tmdl_10-303d.pdf

- A waterbody may be listed on the 303(d) list and have an approved TMDL. It is important that both the 303d list and TMDL listing are both checked to determine if there is more than one impairment
- Determine all the pollutants causing the impairments or listed in the TMDL(s). The percent reduction provided in the TMDL is the default level of treatment needed from the permanent BMPs on the site. City of Columbia SWD may reduce this requirement to a lower percentage on a case by case basis.
- If the receiving water is on the 303(d) list, calculate the post construction load for the pollutant(s) of concern. A possible equation is the Schuler Simple Method (Schueler 1987). This method is based on an extensive database obtained in Washington, D.C. for the National Urban Runoff Program (NURP). The Simple Method estimates pollutant loads from urban development by the following equation:

$$L = 0.227(Q P_j R_v C A) \quad \text{Equation 1}$$

Where:

L = Pollutant load in pounds per desired time interval,

Q = Rainfall depth,

0.6-inch for wet ponds, some wetlands,

1.2-inch for all other BMPs,

P_j = Fraction of rainfall events over the time interval that produce runoff

P_j = 1 for a single event

P_j = 0.9 for larger time intervals (months, years),

R_v = Volumetric runoff coefficient expressing the fraction of rainfall converted to runoff (See Equation 2),

C = Event mean pollutant concentration in mg/l (See Table 3.3),

A = Total area of site in acres (areas < 640 acres are recommended for this method).

$$R_v = 0.05 + 0.09(I) \quad \text{Equation 2}$$

Where: **I** = percent impervious cover (i.e. I = 30 for 30% impervious cover)

- If the receiving water is on the 303(d) list only (no TMDL), calculate the allowed load to meet water quality standards using equation 1. Replace variable C with the concentration of the water quality standard for the pollutant of concern listed in Table 1.2. Then compute the percent needed to reduce the post construction pollutant load from the allowed load.
- Use Appendix A to help select BMPs to treat the pollutants of concern. The last table in Appendix A provides an estimate of how effective a given BMP will be. The BMPs chosen must be able to achieve the required percent reductions in the TMDL or the required load reduction calculated for 303(d) listed waters computed in the previous step.
- If the receiving water is listed on the 303(d) list and has an approved TMDL calculate the load reduction for the pollutant of concern for the water way on the 303(d) list. Compare the percent reduction required to the percent reduction listed in the TMDL. Select BMPs for the pollutant that has the highest percent reduction requirement (i.e. TMDL or 303(d) reduction requirement whichever is highest).
- Revise chosen BMPs until required percent reductions are achieved.
- Provide all calculations in submittal package in a cohesive, easy to follow organization.

Table 1.3 Event Mean Concentration (EMC) Pollutant Loading for Various Land Uses (mg/l)												
Land Use	EMC Pollutant Loading (mg/l)											
	BOD	COD	TSS	TDS	TP	DP	TKN	NO ₂ / NO ₃	Pb	Cu	Zn	Cd
Forest Rural Open	3	27	51	415	0.11	0.03	0.94	0.80	0.000	0.000	0.000	0.000
Urban	3	27	51	415	0.11	0.03	0.94	0.80	0.014	0.000	0.040	0.001
Agricultural/Pasture	3	53	145	415	0.37	0.09	1.92	4.06	0.000	0.000	0.000	0.000
Low Density Residential	38	124	70	144	0.52	0.27	3.32	1.83	0.057	0.026	0.161	0.004
Medium Density Residential	38	124	70	144	0.52	0.27	3.32	1.83	0.180	0.047	0.176	0.004
High Density Residential	14	79	97	189	0.24	0.08	1.17	2.12	0.041	0.033	0.218	0.003
Commercial	21	80	77	294	0.33	0.17	1.74	1.23	0.049	0.037	0.156	0.003
Industrial	24	85	149	202	0.32	0.11	2.08	1.89	0.072	0.058	0.671	0.005
Highways	24	103	141	294	0.43	0.22	1.82	0.83	0.049	0.037	0.156	0.003
Water/Wetlands	4	6	6	12	0.08	0.04	0.79	0.59	0.011	0.007	0.003	0.001

Adapted from NURP (1983), Horner et. al (1994), and Cave et. Al. (1994)

BOD	=	Biochemical Oxygen Demand	TKN	=	Total Kjeldahl Nitrogen
COD	=	Chemical Oxygen Demand	NO ₂ /NO ₃	=	Nitrates / Nitrites
TSS	=	Total Suspended Solids	Pb	=	Lead
TDS	=	Total Dissolved Solids	Cu	=	Copper
TP	=	Total Phosphorus	Zn	=	Zinc
DP	=	Dissolved Phosphorus	Cd	=	Cadmium
BIO	=	Macroinvertebrates			

Fecal coliform (FC) concentrations were not provided in the table above due to the large variability. Guidance from SCHDEC, Beaufort County (2010, Manual for Stormwater Best Management Practices) and Harper (2007, Evaluation of Current Stormwater Design Criteria Within the State of Florida) should be sought when estimating existing and post-development bacteria loads and the reduction requirements.

Chapter 2 – Unified Sizing Criteria

This section presents an integrated approach for meeting the stormwater runoff quality and quantity management requirements by addressing the key adverse stormwater runoff impacts from site development and redevelopment. The purpose is to provide a design framework, which will be required for all sites, to:

- Remove stormwater runoff pollutants and improve water quality
- Prevent downstream streambank and channel erosion
- Reduce downstream overbank flooding
- Safely pass or reduce the runoff from extreme storm events

For these objectives, an integrated set of engineering criteria, known as the Unified Stormwater Sizing Criteria, have been developed to size and design structural stormwater controls. More detailed discussions on the Unified Sizing Criteria can be found in [Section 1.3 of the GSMM](#). Table 2.1 below briefly summarizes the criteria. An example problem, with detailed solution, is provided in Appendix B. Calculation tools can be found in Appendix C.

Table 2.1 Summary of the Unified Sizing Stormwater Sizing Criteria for Stormwater Control and Mitigation	
Sizing Criteria	Description
Water Quality	Treat the runoff from the vast majority of the storms that occur in an average year. For the City, this equates to providing water quality treatment for the runoff (from an entire site) from 1.2 inches of rainfall.
Channel Protection	Provide extended detention of the 1-year storm event released over a period of 24 hours to reduce bank-full flows and protect downstream channels from erosive velocities and unstable conditions.
Overbank Flood Protection	Provide peak discharge control of the 25-year storm event such that the post-development peak rate does not exceed the predevelopment rate to reduce overbank flooding (2-, 5-, 10- and 50-yr events are also detained/retained to meet pre-development rates.)
Extreme Flood Protection	Evaluate the effects of the 100-year storm on the stormwater management system, adjacent property, and downstream facilities and property. Manage the impacts of the extreme storm event through detention controls and/or floodplain management.

Each of the unified stormwater sizing criteria are intended to be used in conjunction with the others to address the overall stormwater impacts from a development site, for the entire range of critical hydrologic events. Figure 2.1 graphically illustrates that the criteria are "stacked" upon one another. For example, the extreme flood protection volume requirement also contains the channel protection volume and the water quality treatment volume. Figures 2.2a and 2.2b show how these volumes would be stacked in a typical stormwater wet or dry pond designed to handle all four criteria. Figure 2.2c provides additional details on a typical outlet structure configuration.

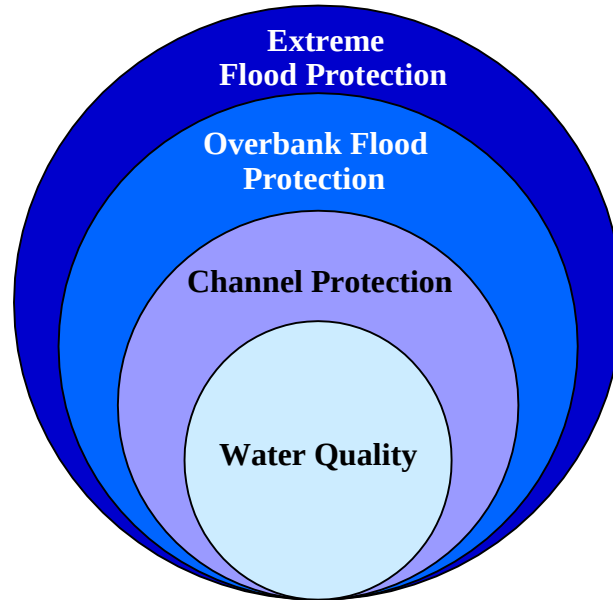


Figure 2.1: Representation of the Unified Stormwater Sizing Criteria

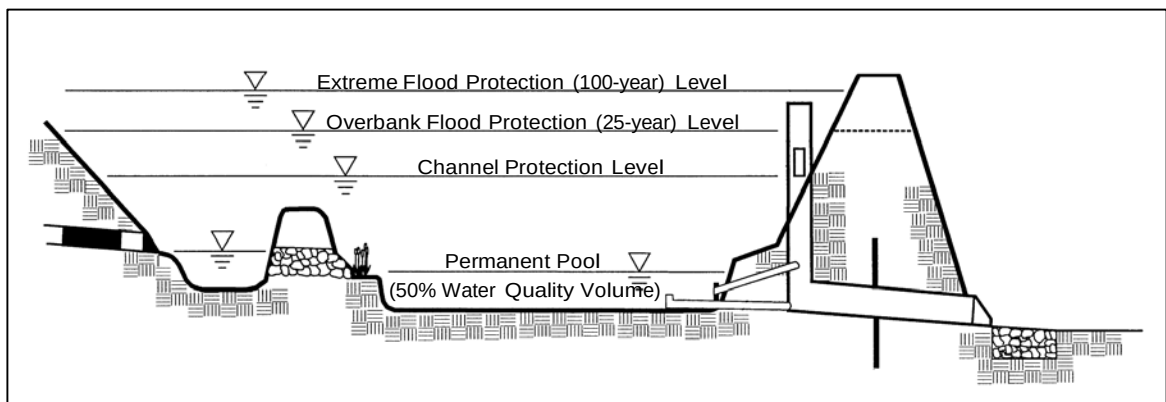


Figure 2.2a: Unified Sizing Criteria Water Surface Elevations in a Wet Pond

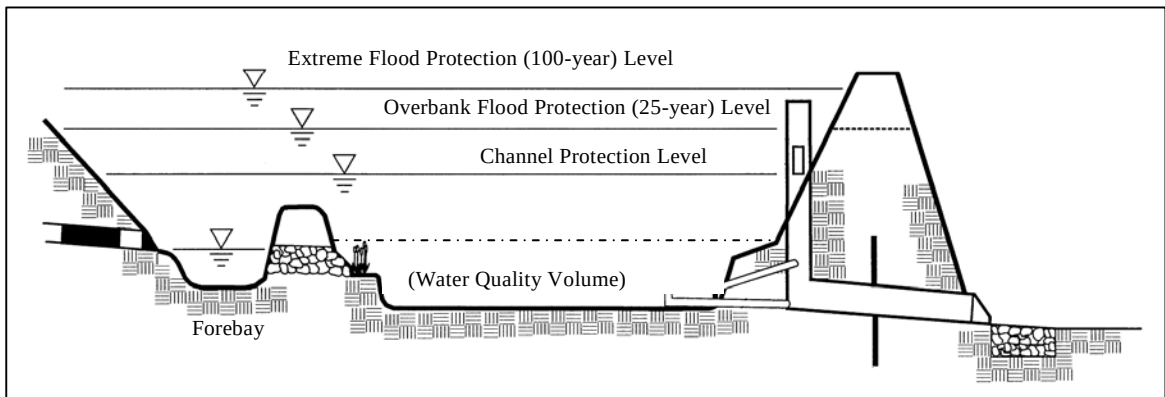


Figure 2.2b: Unified Sizing Criteria Water Surface Elevations in a Dry Pond

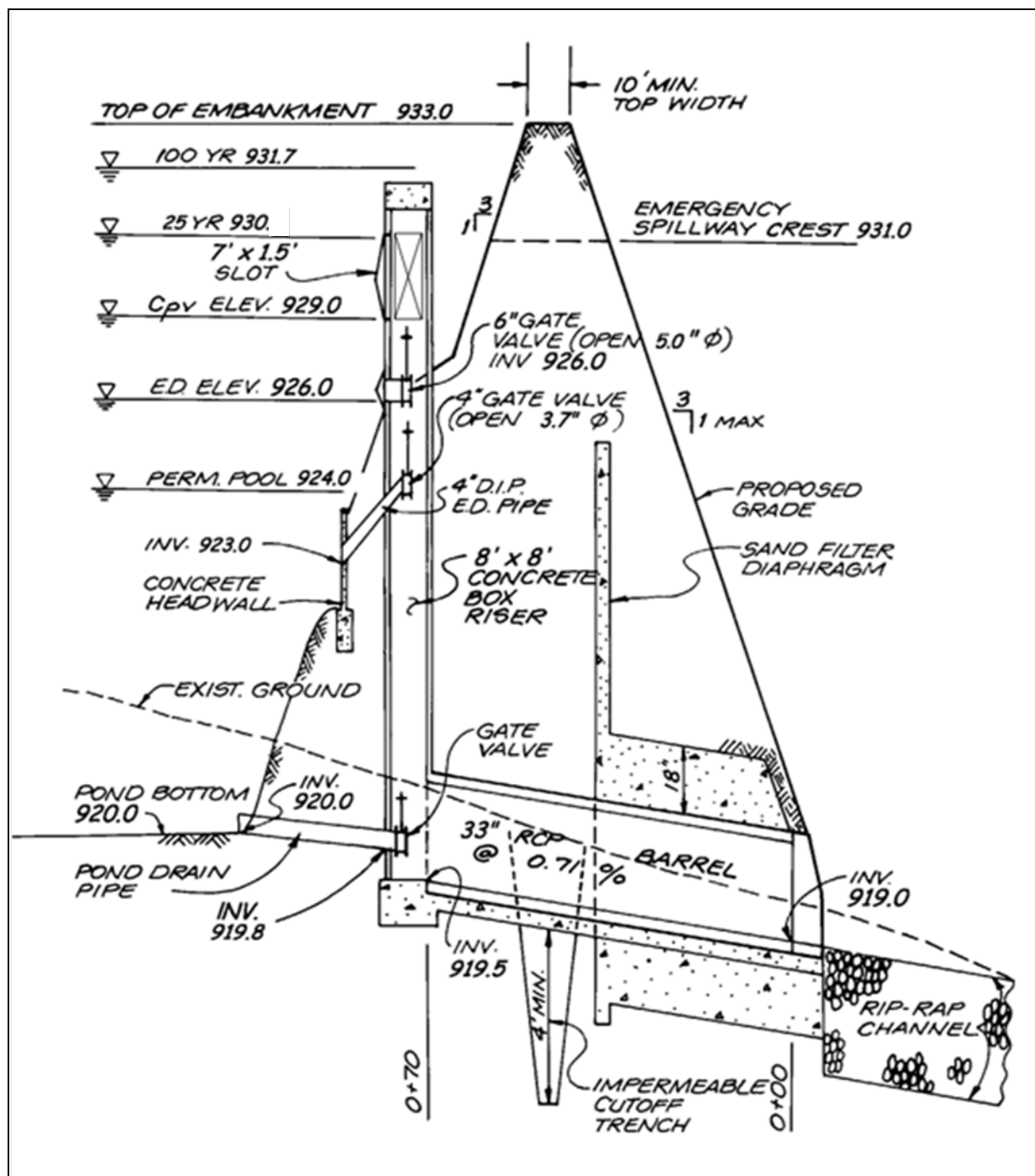


Figure 2.2c: Example of Unified Sizing Criteria Outfall Structure Details

The following pages describe the four sizing criteria in detail and present guidance on how to properly compute and apply the required storage volumes.

2.1 Water Quality (WQv)

The Water Quality sizing criterion, denoted WQv, specifies a treatment volume required to remove a significant percentage of the total pollution load inherent in stormwater runoff. This is done by intercepting and treating the runoff from approximately 85% of the storms that are expected to occur during the course of a “typical” year. It is also expected that a portion of the runoff from all storms greater than 1.2 inches can also be treated. WQv is a runoff volume that is directly related to the amount of impervious cover at a site.

The volumetric runoff coefficient (R_v) and the site area are the key factors used in this calculation, as shown in the formula below:

$$WQ_V = \frac{1.2R_V A}{12} \quad \text{where:}$$

WQ_V = water quality volume 1.2-inch rainfall (in acre-feet)

A = site area in acres

R_V = 0.05 + 0.009(I) where:

I is entered as percent impervious cover (i.e. I = 30 for 30% impervious cover)

Pollutant Reduction Goal

This Unified Sizing Criteria, and other supporting elements of the BMP Manual, follows the philosophy of removing pollutants to the “maximum extent practicable” (MEP) or the “maximum extent technically feasible” (METF) through the use of a percentage removal performance goal. The approach taken by the City is to require treatment of the WQv from a site to reduce post-development total suspended solids (TSS) loadings by 80%, as measured on an average annual basis. This performance goal is based upon U.S. EPA guidance and has been adopted nationwide by many local and statewide agencies. This method has also been shown to address other pollutants of concern to the MEP/METF, as both runoff volume reduction and sediment loads, which pollutants can be bound to, are addressed. Furthermore, when coupled with the Channel Protection sizing criterion, which detains and treats even greater flows, the goals of SCDHEC Regulation 72-300 will be met.

Determining the Water Quality Volume (WQv)

- **Measuring Impervious Area:** The area of impervious cover can be taken directly off a set of plans or appropriate mapping. Where this is impractical, NRCS TR-55 land use/impervious cover relationships can be used to estimate impervious cover. **I is expressed as a percent value not a fraction (e.g., I = 30 for 30% impervious cover)**
- **Multiple Drainage Areas:** When a development project contains or is divided into multiple drainage areas, WQv must be calculated and addressed separately for each drainage area.
- **Off-site Drainage Areas:** Off-site existing impervious areas may be excluded from the calculation of the WQv volume.
- **Credits for Site Design Practices:** The use of certain better site design practices may allow the WQv volume to be reduced through the subtraction of a site design “credit.” These site design credits are described in Chapter 4.

- Determining the Peak Discharge for the Water Quality Storm: When designing off-line structural control facilities, the peak discharge of the water quality storm (Q_{wq}) can be determined using the method provided later in this Chapter.
- Extended Detention of the Water Quality Volume: The water quality treatment requirement can be met by providing a 24-hour drawdown of a portion of WQ_v in a stormwater pond or wetland system. Referred to as water quality ED (extended detention), it is different than providing extended detention of the 1-year storm for the channel protection volume (CP_v). The ED portion of the WQ_v may be included when routing the CP_v.
- WQ_v can be expressed in cubic feet by multiplying by 43,560.
- WQ_v can also be expressed in watershed-inches by removing the area (A) and the “12” in the denominator.

2.2 Channel Protection (CP_v)

The Channel Protection sizing criterion specifies that 24 hours of extended detention be provided for runoff generated by the 1-year, 24-hour rainfall event to protect downstream channels.

- CP_v control is not required for sites with minimal areas or imperviousness which result in post-development discharges less than 2.0 cfs.
- The use of nonstructural site design practices that reduce the total amount of runoff will also reduce the channel protection volume by a proportional amount.
- The channel protection criteria may be waived by a local jurisdiction for sites that discharge directly into larger streams, rivers, wetlands, or lakes where the reduction in the smaller flows will not have an impact on streambank or channel integrity.

The increase in the frequency and duration of bank-full flow conditions in stream channels due to urban development is the primary cause of streambank erosion and the widening and down-cutting of stream channels. Therefore, channel erosion downstream of a development site can be significantly reduced by storing and releasing stormwater runoff from the channel-forming runoff events (which correspond approximately to the 1-year storm event) in a gradual manner to ensure that critical erosive velocities and flow volumes are not exceeded.

Determining the Channel Protection Volume (CP_v)

- Rainfall Depths: The rainfall depth of the 1-year, 24-hour storm is 3.1 inches.
- Multiple Drainage Areas: When a development project contains or is divided into multiple drainage areas, CP_v may be distributed proportionally to each drainage area.
- Off-site Drainage Areas: Off-site drainage areas must be modeled as “present condition” for the 1-year storm event. If there are adequate upstream channel protection controls, then the
- Off-site area can be modeled as “forested” or “natural” condition. A structural stormwater control located “on-line” will need to safely bypass any off-site flows.
- Routing/Storage Requirements: The required storage volume for the CP_v may be provided above the WQ_v storage in stormwater ponds and wetlands with appropriate hydraulic control structures for each storage requirement.
- Control Orifices: Orifice diameters for CP_v control of less than 3 inches are not recommended without adequate clogging protection.

Specific Methodology:

1. Compute Initial Abstraction divided by rainfall, (I_a/P) for given hydrologic parameters:
 - o $P = 3.1$ inches
 - o $I_a = 0.2 \cdot (1000/CN - 10)$
 - o $T_c =$ as per TR-55
2. From Chart 2.1, read Unit Peak Discharge (q_u) for given post developed time of concentration (t_c) and computed I_a/P (in csm/inch).
3. From attached Chart 2.2, read ratio of Outflow to Inflow (q_o/q_i) for 24-hr detention or from the equation:

$$q_o/q_i = 12.03 q_u^{-0.9406}$$

4. Compute the ratio of the volume of storage divided by the volume of runoff (v_s/v_r) from Chart 3.3 or by equation where:

$$v_s/v_r = 0.683 - 1.43(q_o/q_i) + 1.64 (q_o/q_i)^2 - 0.804(q_o/q_i)^3$$

5. Estimate Channel Protection Volume (C_{p_v});

$$C_{p_v} = v_r(v_s/v_r)(A)/12 \text{ in acre-feet.}$$

Where: v_r = the post-developed volume of runoff depth for the 1-yr 24-hr storm in inches

A = the drainage area in acres, and

12 = a conversion factor.

Or

$$C_{p_v} = v_r(v_s/v_r) \text{ in acre-feet.}$$

Where: v_r = the post-developed volume of runoff volume for the 1-yr 24-hr storm in acre-feet

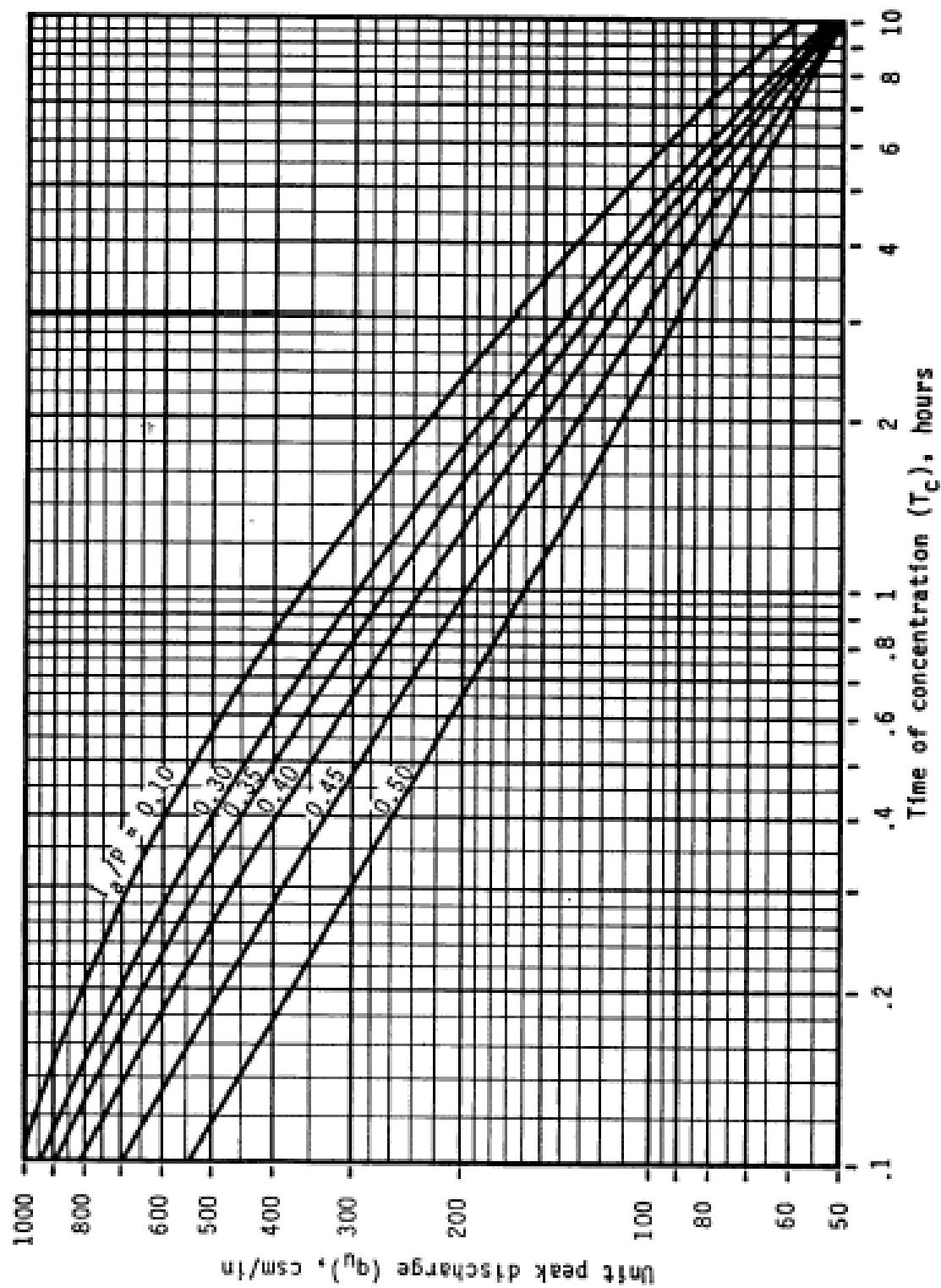


Figure 2.1.5-6
 SCS Type II Unit Peak Discharge Graph
 (Source: SCS, TR-55, Second Edition, June 1986)

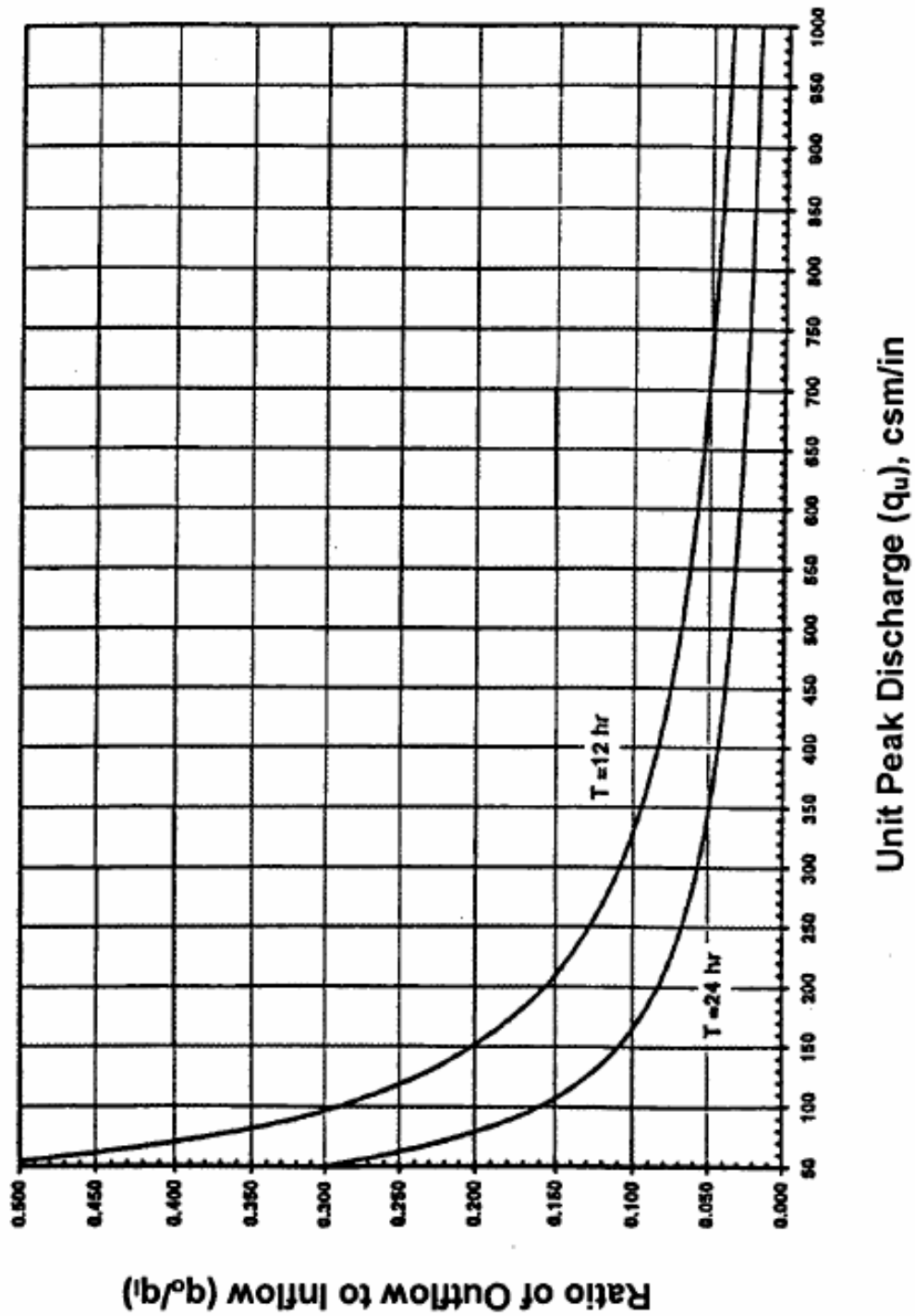


Chart 2.1
SCS Type II Unit Discharge Graph
(Source: SCS, TR-55, Second edition, June 1986)

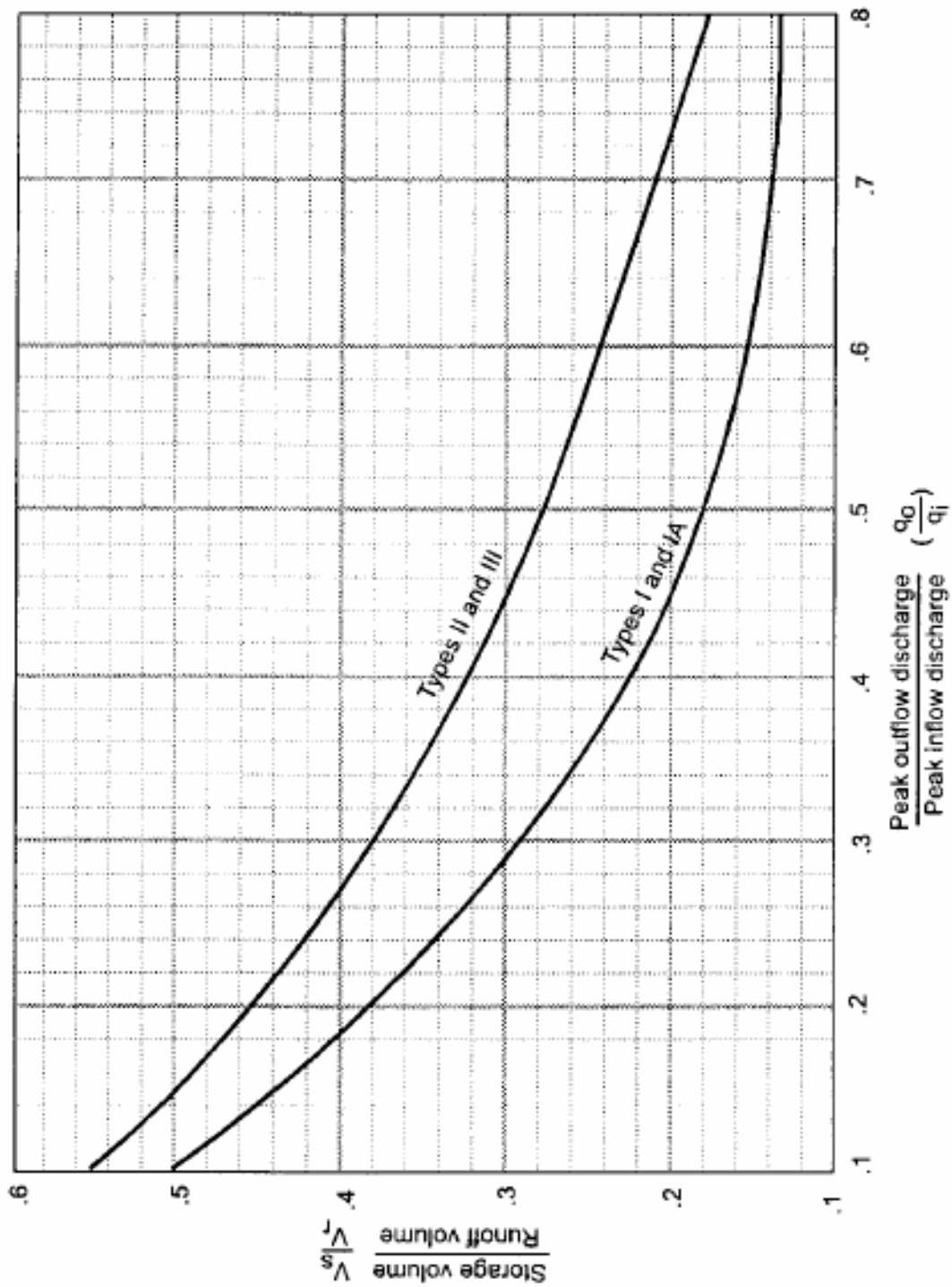


Chart 2.3
Approximate Detention Basin Routing for Rainfall Types I, IA, II and III
 (Source: TR-55, 1986)

2.3 Overbank Flood Protection (Q_{FP})

The Overbank Flood Protection criterion specifies that the post-development 2-year and 10-year (also 25-year for site 40 acres and larger), 24-hour storm peak discharge rates not exceed the pre-development (or undisturbed natural conditions) discharge rate. This is achieved through detention of runoff from these events.

- The use of nonstructural site design practices that reduce the total amount of runoff will also reduce Q_{FP} by a proportional amount.
- When the City has designated a watershed to have existing flooding problems that require increased detention and flood control requirements (See Section 1.2.1), the Q_2 , Q_{10} , and Q_{FP} flows must be reduced to less than the existing flows as determined by the City.

Note: This portion of the Unified Sizing Criteria is required in ADDITION to all other hydrologic and hydraulic analyses required by the City (i.e. 2-, 5-, 10- and 50-year events).

Determining the Overbank Flood Protection Volume (Q_{FP})

- **Peak-Discharge and Hydrograph Generation:** The SCS TR-55 hydrograph method will be used to compute the peak discharge rates and runoff volumes for the all analyzed storm events. Apply the methodology for estimating the required storage volume provided below.
- **Rainfall Depths:** The rainfall depth of the 2-year, 24-hour storm will be 3.6 inches. The rainfall depth of the 10-year 24-hour storm will be 5.3 inches. The rainfall depth of the 25-year, 24-hour storm will be 6.4 inches.
- **Off-site Drainage Areas:** Off-site drainage areas must be modeled as “present condition” for the design storm events and do not need to be included in Q_{FP} estimates, but can be routed through a structural stormwater control.
- **Downstream Analysis:** Downstream areas must be checked to ensure there is no peak flow increase above pre-development conditions to the point where the site area is 10% of the total drainage to that point. See Section 3.1.4 for the full details on this method.

Estimated Volume Requirement Methodology:

1. Run typical site hydrology
2. Compute the ratio of the post-developed design storm discharge to the pre-developed discharge (q_o/q_i).
3. Read the volume of storage divided by the volume of runoff (v_s/v_r) from Chart 2.3
4. Estimate the volume of storage required for the overbank flood (V_s).
 $V_s = v_r(v_s/v_r)$ in acre-feet,

Where: v_r = the post-developed volume of runoff for the selected overbank storm converted to acre-feet

5. Experience shows that multi-outlet volumes are at least 15% low so actual Q_{25} storage estimate is

$$VS = V_s * 1.15$$

2.4 Extreme Flood Protection (Q_{100})

The Extreme Flood Protection criterion specifies that all stormwater management facilities and associated grading plans and site layouts be designed to protect buildings, ponds, roads, and other permanent structures from the 100-year, 24-hour return frequency storm event, denoted Q_{100} . This is accomplished either by:

1. Controlling Q_{100} through on-site or regional structural stormwater controls to maintain the existing 100-year floodplain. This is done where residences or other structures have already been constructed within the 100-year floodplain fringe area; or
2. By designing the on-site conveyance system, site grading, and building layout to safely pass Q_{100} without impacting buildings, ponds, roads, or other permanent structures and allowing it to discharge into a receiving water.

Note: Flows can be conveyed without retention or detention to a receiving floodplain if it can be shown that the floodplain is sufficiently sized to account for extreme flow increases from the site without causing damage; or

3. When the City has designated a watershed to have existing flooding problems that require increased detention and flood control requirements (See Section 3.2.1), the Q_{100} must be reduced to less than the existing 100-year flows as determined by the City.

Local flood protection (levees, floodwalls, flood proofing, etc.) and/or channel enlargements may be offered as a substitution as appropriate, as long as adequate conveyance and structural safety is ensured through the measure used, and stream environmental integrity is adequately maintained. The City reserves the right to reject such substitutions.

Determining the Extreme Flood Protection Criteria (Q_{100})

- Peak-Discharge and Hydrograph Generation: The SCS TR-55 hydrograph method will be used to compute the peak discharge rate and runoff for the 100-year, 24-hour storm. Apply the methodology for estimating the required storage volume provided below
- Rainfall Depths: The rainfall depth of the 100-year, 24-hour storm will be 8.3 inches.
- Off-site Drainage Areas: Off-site drainage areas must be modeled as “full build-out condition” for the 100-year storm event to ensure safe passage of future flows.
- Downstream Analysis: If Q_{100} is being detained, downstream areas must be checked to ensure there is no peak flow increase above pre-development conditions to the point where the site area is 10% of the total drainage to that point. See Section 3.1.4 for more details on how to properly perform a Downstream Analysis.

Estimated Volume Requirement Methodology:

1. Run typical site hydrology
2. Compute the ratio of the post-developed 100-year discharge to the pre-developed discharge (q_o/q_i).
3. Read the volume of storage divided by the volume of runoff (v_s/v_r) from Chart 2.3
4. Estimate the volume of storage required for the overbank flood (V_s).

$$V_s = v_r(v_s/v_r) \text{ in acre-feet,}$$

Where: v_r = the post-developed volume of runoff for the selected overbank storm converted to acre-feet

5. Experience shows that multi-outlet volumes are at least 15% low so actual Q_{100} storage estimate is

$$VS = V_s * 1.15$$

2.5 Water Quality Volume Peak Flow Calculation

The peak rate of discharge for the water quality design storm (Q_{wq}) is needed for the sizing of off-line diversion structures, such as for sand filters, bioretention, grass filter strips, grassed swales, and infiltration trenches.

The following procedure can be used to estimate peak discharges for small storm events. It relies on the Water Quality Volume and the simplified peak flow estimating method above. A brief description of the calculation procedure is presented below.

1. Using WQ_v , a corresponding Curve Number (CN) is computed utilizing the following equation:

$$CN = 1000/[10 + 5P + 10Q_{wv} - 10(Q_{wv}^2 + 1.25 Q_{wv}P)^{1/2}]$$

Where, P = rainfall, in inches (use 1.2 inches for the Water Quality Storm)

Q_{wv} = Depth of Water Quality Volume is expressed in inches (1.2 R_v)

$$R_v = 0.05 + 0.009(I) \text{ where:}$$

I is entered as percent impervious cover (i.e. $I = 30$ for 30% impervious cover)

2. Once a CN is computed, the time of concentration (t_c) is computed (based on SCS methodology).

3. Using the computed CN, time of concentration (T_c) and drainage area (A), in acres; the peak discharge (Q_{wq}) for the water quality storm event is computed using a slight modification of the Simplified SCS Peak Runoff Rate Estimation technique, using Type II rainfall distribution:

- Read initial abstraction (I_a), compute I_a/P
- Read the unit peak discharge (q_u) for appropriate T_c
- Using WQ_v , compute the peak discharge (Q_{wq})

$$Q_{wq} = q_u * A * Q_{wv}$$

where Q_{wq} = the water quality peak discharge (cfs)
 q_u = the unit peak discharge (cfs/mi²/inch)
 A = drainage area (mi²)
 Q_{wv} = Depth of Water Quality Volume, in inches (1.2Rv)

Chapter 3 – Best Management Practices (BMPs)

3.1 Water Quantity Control Requirements

3.1.1 General Requirements

Water quantity control is an integral component of overall stormwater management. Its purpose is to negate the effects of stormwater runoff associated with land use changes due to development during storm events. The following design criteria are established for water quantity control, and when applied properly will meet or exceed the requirements of SCDHEC Regulation 72-300.

1. Post-development peak discharge rates shall not exceed pre-development peak discharge rates for the 2, and 10-year frequency 24-hour duration storm events. For developments 40 acres and larger, post-development peak discharge rates shall not exceed pre-development peak discharge rates for the 25-year frequency 24-hour duration storm event. The same hydrologic procedures shall be used in determining both the pre-development and post-development peak flow rates.
2. Post-development discharge velocities shall be reduced to provide non-erosive flow velocities from structures, channels or other control measures, or equal the pre-development 10-year 24-hour storm event flow velocities, whichever is less.
3. For post construction, the detention volume from all controls shall be drained from the structure within 72 hours. During construction, detention volumes can be temporarily stored to allow settling of particles. Upon project finalization pond elevations must be per the approved plans.
5. In addition to being allowed for water quality purposes, infiltration devices shall be required on those sites which do not currently discharge stormwater runoff or have no existing outlet. In such cases, in the post-development condition, devices shall be designed to infiltrate the runoff volume equivalent to the 5-year storm event. For evaluating storm events with a return interval greater than 5 years, the discharge rate from the site shall be limited to (not exceed) that of a site of equivalent size and slope with a SCS Curve Number equal to 39. See Section 5.2.6.L.v for more information, as well as [Section 3.2.5 of the GSMM](#), for detailed selection, design, performance and operation & maintenance details on infiltration basins.

Note: An alternative design for infiltration basins can be found in Appendix O.

6. Watersheds with documented water quantity problems may have more stringent or modified design criteria determined by the SWD or as dictated by State and Federal Regulations. Some examples of variable criteria include but are not limited to:
 - a. Post-development discharge volumes from the entire development area not exceeding pre-development discharge volumes for storm frequencies smaller than the 2-year storm event,
 - b. Reduction of peak flow rates below pre-development levels,
 - c. Downstream channel, culvert, or property improvements.
7. Water quantity/volume waivers may be granted on a case-by-case basis. Final approval of a waiver request will be given at the discretion of the SWD. A water quantity/volume

waiver does not excuse water quality considerations. A project may be eligible for a waiver from the stormwater management requirements for water quantity/volume control if the applicant can justly verify the following items;

- a. The proposed project's peak flow rate or volume control for stormwater management would not create, aggravate, or accelerate downstream flooding or cause a detrimental impact to the downstream ecosystem, the receiving storm water system, or downstream property.
 - b. The design engineer shall sign the following statement, "The increased flows will not have a significant adverse impact on the downstream and adjacent properties".
 - c. Calculations shall be provided that demonstrate the site has addressed the Unified Stormwater Sizing Criteria, including the Water Quality (WQv) and Channel Protection (CPv) volumes, to the maximum extent practical, or to the level specific by the SWD.
 - It is recommended that a designer consult with the SWD at the earlier conceptual stages of a project to discuss water quality performance requirements for sites that may be more challenging.
8. An analysis shall be required for all development sites disturbing more than 2 acres to determine the impacts on downstream areas based on the 10-and 100-year 24-hour storm events unless a waiver or variance is granted. Downstream analysis shall determine whether the design storm events of interest cause or increase flooding, pollution, or erosion impacts to downstream properties, road crossings, and others areas as directed by the SWD. Applications for permit coverage must discuss this impact, the degree of the impact, and potential solutions. Analysis criteria shall include, but not be limited to:
 - a. Existing land use curve numbers shall be used for developed areas outside of the project area.
 - b. The weighted curve number for the developed portion of the site shall be used for all undeveloped upstream areas.
 - c. Flows must be routed using an accepted hydrologic and hydraulic method.
 - d. Hydraulic step-backwater calculations (Corps of Engineer's HEC-2 or HEC-RAS models or equivalent) may be required by the SWD based on several factors, such as the severity of potential impact and location of project.
 - e. The discussions must include the severity of impact on any upstream and proposed storm water quantity or quality structure.
 - If the downstream analysis determines that the development of a particular site does contribute to flooding, pollution, or erosion problems, then appropriate controls shall be implemented:
9. All quantity controls that are also used for water quality control shall have a forebay, mirco-pool, screening vault, or skimmer/debris deflector for removal of debris and coarse sediments. The benefit of the forebay is that it inhibits the main pond from filling up with large particles, therefore allowing the main pond to maintain its original design volume.
10. Documentation on the design, installation, and maintenance of stormwater quantity facilities can be found in [Sections 3.2-3.4 of the GSMM](#).

3.1.2 Accepted Quantity Controls

Detention structural controls are used for providing water quantity control and are typically used downstream of other minor structural controls. These structures are designed to provide channel protection, overbank flood protection, and protection against adverse downstream impacts that are related to the increase in peak flow rates and flow volumes from land disturbing activities. Detention structural stormwater controls accepted by SWD are shown in Table 3.1.

Table 3.1: Accepted quantity controls

General Structural Control	Description
Dry Detention/Dry Extended Basins	Dry detention basins and dry extended detention basins are surface storage facilities intended to provide temporary storage of stormwater runoff and releasing it at a designed flow rate to reduce downstream water quantity impacts. These structures are designed to completely drain to a dry condition within 72 hours.
Wet Storm Water Detention Basins • Wet Pond • Wet Extended Detention Pond • Micropool Extended Detention Pond • Multiple Pond System	Wet detention basins are constructed stormwater basins that have a permanent pool or micropool of water. Runoff from each rain event is detained above the permanent pool and released at a designed flow rate to reduce downstream water quantity impacts. Permanent pool depths must be ≥ 4 feet to reduce mosquito breeding.
Multi-purpose Detention Areas	Multi-purpose detention areas are used for one or more specific activities such as parking areas and rooftops. These areas are used to provide temporary storage of runoff. Some of the multi-purpose area such as infiltration trenches or bio-retention areas may also be used for water quality purposes.
Underground Detention	Underground detention is used as an alternative to surface dry-detention basins. They are used in areas that are space-limited where there is not enough adequate land to provide the required detention volume. The underground storage utilizes tanks, vaults, and buried pipes to supply the required storage volume.
Infiltration Basins	Infiltration basins are used to remove runoff from the flow path into the ground. They are used in areas that currently do not discharge stormwater or create runoff only during large storm events.

3.1.3 Design Procedures

This section provides the general procedures for the design of stormwater quantity structures. The following items shall be required for the design of these structures and routing flows through them:

1. Compute the inflow hydrograph for the structure for the 2, 10, 25, 50 and 100-year 24-hour storm events for both the existing and proposed conditions. From this, determine peak flow rates for each storm.
2. Compute a stage-storage relationship for the proposed structure. A stage storage-curve defines the relationship between the depth of water and storage volume within the detention facility. Stage-storage and stage-discharge calculations must be included in the engineering calculations.

3. Compute stage-discharge relationship of the outlet control structure(s). A stage-discharge curve defines the flow capacity of a structure at a given stage or elevation. Also compute outlet barrel capacity and discharge velocity for energy dissipation design.
4. Perform routing calculations for the 2, 10, 25, 50 and 100-year storm events.
5. The peak discharge rate from the pond must be less than or equal to the peak discharge rate for the pre-development conditions for the 2 and 10-year storm events (also 25-year storm event for developments 40 acres and larger), unless the SWD allows a tolerance for peak flow matching. Finally, check to make sure the discharge hydrograph from the 100-year storm event provides a minimum of 1-foot of freeboard with the banks of the facility.
6. Evaluate the control structure outlet flow velocity and provide velocity control and channel stabilization. Drawings and details must be provided for outlet structures and basin.
7. Concentrated flow from any discharge point shall be returned to the overland flow condition.

3.1.4 Downstream Hydrologic Assessment

The purpose of the overbank flood protection and extreme flood protection criteria is to protect downstream properties from flood increases due to upstream development. These criteria require the designer to control peak flow at the outlet of a site such that post-development peak discharge equals pre-development peak discharge. The reasons for this have to do with (1) the timing of the flow peaks, and (2) the total increase in volume of runoff. Further, due to a site's location within a watershed, there may be very little reason for requiring overbank flood control from a particular site. This section outlines the required procedure, as part of a developer's stormwater management site plan, which is detailed in [Section 2.1.9 of the GSMM](#).

The Ten-Percent Rule: Based on studies and results for a large number of sites, a site's zone of influence is considered to be the point where the drainage area controlled by the detention or storage facility comprises 10% of the total drainage area. For example, if the structural control drains 10 acres, the zone of influence ends at the point where the total drainage area is 100 acres or greater. However, some sites may require that the "zone of influence" be extended further downstream.

Typical steps in the application of the ten-percent rule are:

1. Determine the target peak flow for the site for predevelopment conditions.
2. Using a topographic map determine the lower limit of the zone of influence (aka "10% point").
3. Using a hydrologic model determine the pre-development peak flows and timing of those peaks at each tributary junction beginning at the pond outlet and ending at the next tributary junction beyond the 10% point.

4. Change the land use on the site to post-development and rerun the model.
 - If the undetained post-development peak flow rates are unchanged at the “10% point”, when compared the pre-development model, the lower limit of the zone of influence has been affirmed.
 - If the undetained post-development peak flow rates have increased at the “10% point” when compared the pre-development model, the lower limit of the zone of influence must be extended further downstream until there is no change in flow.
5. Design the structural control facility such that the overbank flood protection (25-year) post-development flow does not increase the peak flows at the outlet and the determined tributary junctions.

Even if the overbank flood protection requirement is eliminated, the water quality treatment (WQv), channel protection (CPv), and extreme flood protection (Q_{100}) criteria will still need to be addressed.

For a detailed example, see [Section 2.1.9 of the GSMM](#).

3.1.5 Routing with WQv Removed

When off-line structural controls such as bioretention areas, sand filters and infiltration trenches capture and remove the water quality volume (WQv), downstream structural controls do not have to account for this volume during design. That is, the WQv may be subtracted from the total volume that would otherwise need to be routed through the downstream structural controls.

From a calculation standpoint this would amount to removing the initial WQv from the beginning of the runoff hydrograph – thus creating a “notch” in the runoff hydrograph. Since most commercially available hydrologic modeling packages cannot handle this type of action, the following method has been created to facilitate removal from the runoff hydrograph of approximately the WQv:

- Enter the horizontal axis on Chart 3.1 with the impervious percentage of the watershed and read upward to the predominant soil type (interpolation between curves is permitted)
- Read left to the factor
- Multiply the curve number for the sub-watershed that includes the water quality basin by this factor – this provides a smaller curve number

The difference in curve number will generate a runoff hydrograph that has a volume less than the original volume by an amount approximately equal to the WQv.

Notes:

1. This method should be used only for bioretention areas, filter facilities and infiltration trenches where the drawdown time is ≥ 24 hours.
2. This method can only be applied to catchments with a homogenous soil class (i.e. A, B, C, D), or are dominated significantly by a single soil class.
3. This method also assumed that 100% of the required WQv for the catchment area being analyzed is stored in upland BMPs

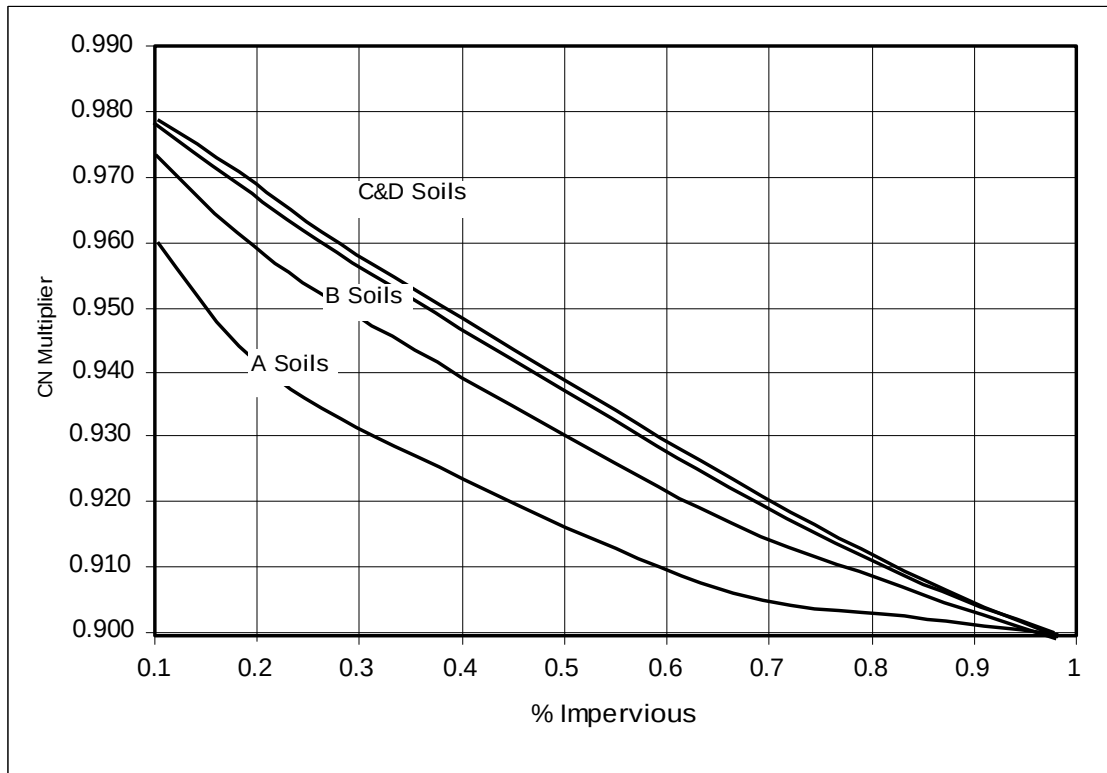


Chart 3.1 - Curve Number Adjustment Factor

Example

A site design employs an infiltration trench for the WQv and has a curve number of 72, is B type soil, and has an impervious percentage of 60%, the factor from Chart 3.1 is 0.92. The curve number to be used in calculation of a runoff hydrograph for the quantity controls would be:

$$(72 \times 0.92) = 66$$

3.2 Accepted Water Quality BMPs

In selecting a BMP(s), it is most important to know what pollutants need to be treated to meet water quality goals. With proper planning, installation, and maintenance, BMPs are expected to reduce pollutant loads to receiving waters, reduce erosion, and provide health and safety benefits. Structural stormwater controls (aka BMPs) are constructed stormwater management facilities designed to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity due to urbanization.

This Manual allows for a number of structural stormwater controls for meeting unified stormwater sizing criteria. The recommended controls are divided into three categories: general application, limited application, and detention structural controls. These categories of BMPs have varying abilities to address downstream channel protection (CPv), overbank flood protection (Q_{25}) and/or extreme flood protection (Q_{100}).

3.2.1 General Application Controls

General application structural controls are recommended for use with a wide variety of land uses and development types. These structural controls have a demonstrated ability to effectively treat the Water Quality Volume (WQv) and are presumed to be able to remove 80% of the total annual average TSS load in typical post-development urban runoff when designed, constructed and maintained in accordance with recommended specifications.

The allowable types of general application controls are summarized below. Detailed descriptions of each structural control along with design criteria and procedures are provided in [Section 3.2 of the GSMM](#).

Table 3.2 lists and briefly describes the general application structural stormwater control practices. These structural controls are recommended for use in a wide variety of applications. A detailed discussion of each of the general application controls, as well as design criteria and procedures can be found in [Section 3.2 of the GSMM](#).

Table 3.2 General Application Structural Controls	
Structural Control	Description
Stormwater Ponds • Wet • Wet Extended Detention • Micropool Extended Detention • Multiple Pond Systems	Wet detention basins are constructed stormwater basins that have a permanent pool or micropool of water. Runoff from each rain event is detained above the permanent pool and released at a designed flow rate to reduce downstream water quantity impacts. Permanent pool depths must be ≥ 4 feet to reduce mosquito breeding.
Bioretention Areas	Bioretention areas are shallow stormwater basins or landscaped areas which utilize engineered soils and vegetation to capture and treat stormwater runoff. Runoff may be returned to the conveyance system, via underdrain, or allowed to partially infiltrate into the soil.
Infiltration Trench/Basin	An infiltration trench is an excavated trench filled with stone aggregate used to capture and allow infiltration of stormwater runoff into the surrounding soils through the bottom and sides of the trench. An infiltration basin allows infiltration of stormwater runoff into the surrounding soils through the bottom and sides of the trench.

Table 3.2 General Application Structural Controls	
Structural Control	Description
Enhanced Swales • Dry Swale • Wet Swale/Wetland Channel	Enhanced swales are vegetated open channels that are explicitly designed and constructed to capture and treat stormwater runoff within dry or wet cells formed by check dams or other means.

3.2.2 Limited Application Controls

Table 3.3 lists the limited application structural stormwater control practices, along with the rationale for limited use. These structural controls are recommended for use with particular land uses and densities, to meet certain water quality requirements, for limited usage on larger projects, or as part of a stormwater treatment train. A detailed discussion of each of the limited application controls, as well as design criteria and procedures can be found in [Section 3.3 of the GSMM](#).

Table 3.3 Limited Application Structural Controls	
Structural Control	Description and Rationale for Limited Use
Biofilters • Filter Strip • Grass Channel	Both filter strips and grass channels provide “biofiltering” of stormwater runoff as it flows across the grass surface. However, by themselves these controls cannot meet the performance goal. Consequently, both filter strips and grass channels should only be used as pretreatment measure or as part of a treatment train approach. They are also acceptable for use as a site design credit (see Chapter 4).
Hydrodynamic Devices • Gravity (Oil-Grit) Separator	Hydrodynamic controls use the movement of stormwater runoff through a specially designed structure to remove target pollutants. They are typically used on smaller impervious commercial sites and urban hotspots. These controls typically do not meet the 80% TSS removal performance goal and therefore should only be used as a pretreatment measure and as part of a treatment train approach.
Porous Surfaces • Porous Concrete • Porous Asphalt • Modular Porous Paver Systems	Porous surfaces are permeable pavement surfaces with an underlying stone reservoir to temporarily store surface runoff before it infiltrates into the subsoil. Porous concrete is the term for a mixture of coarse aggregate, portland cement and water that allows for rapid infiltration of water. Modular porous paver systems consist of open void paver units laid on a gravel subgrade. Both porous concrete and porous paver systems provide water quality and quantity benefits, but have high workmanship and maintenance requirements, as well as high failure rates. Note: Porous asphalt surfaces have a higher tendency to be clogged by clays, silts and oils resulting in a potentially high maintenance burden to maintain the effectiveness of this structural control. Further, summer heat in South Carolina can cause the asphalt to melt, destroying the porous properties of the surface. Therefore, the specific application of this BMP must be reviewed for both sediment and heat issues, as well as the traffic load that it is intended to carry, before allowing the application of this BMP.

Table 3.3 Limited Application Structural Controls (Cont.)

Structural Control	Description and Rationale for Limited Use
Media Filter Inserts	Media filter inserts, such as catch basin inserts and filter systems, are easily clogged and require a high degree of regular maintenance and replacement to achieve the intended water quality treatment performance and should not be used for areas of new development or redevelopment. These structural controls may serve a potential use in stormwater retrofitting. Before using this BMP, the designer must justify the anticipated performance for the constituent of concern, and receive approval from the City before included this BMP in any designs or construction activities.
- Proprietary Systems - Commercial Stormwater Controls	Proprietary controls are manufactured structural control systems available from commercial vendors designed to treat stormwater runoff and/or provide water quantity control. Proprietary systems often can be used on small sites and in space-limited areas, as well as in pretreatment applications. However, proprietary systems are often more costly than other alternatives, may have high maintenance requirements, and often lack adequate independent performance data, particularly for use in Georgia conditions.

3.2.3 Detention Structural Controls

Table 3.4 lists the detention structural stormwater control practices. These structural controls are recommended only for providing water quantity control, i.e. channel protection, overbank flood protection and/or extreme flood protection in a stormwater treatment train. A detailed discussion of each of the detention controls, as well as design criteria and procedures can be found in [Section 3.4 of the GSMM](#).

Due to the potential for pollutant resuspension and outlet clogging, detention structural controls are not intended to treat stormwater runoff and should be used downstream of other water quality structural control in a treatment train (forebay, micro-pool, filter strip, etc.)

Table 3.4 Detention Structural Controls	
Structural Control	Description
Dry Detention / Dry Extended Detention Basins	Dry detention basins and dry extended detention (ED) basins are surface facilities intended to provide for the temporary storage of stormwater runoff to reduce downstream water quantity impacts.
Multi-Purpose Detention Areas	Multi-purpose detention areas are site areas used for one or more specific activities, such as parking lots and rooftops, which are also designed for the temporary storage of runoff.
Underground Detention	Underground detention tanks and vaults are an alternative to surface dry detention for space-limited areas where there is not adequate land for a dry detention basin or multi-purpose detention area.

3.2.4 Not Recommended Structural Controls

The following structural controls in Table 3.5 are not recommended for use in the City of Columbia to meet stormwater management objectives, as they fail to demonstrate an ability to meet the majority of the water quality treatment goals and/or present difficulties in operation and maintenance.

Table 3.5 Not Recommended Structural Controls	
Structural Control	Rationale for Lack of Recommendation
Stormwater Wetlands • Shallow Wetland • Extended Detention Shallow Wetland	Stormwater wetlands consist of a combination of shallow marsh areas, open water and semi-wet areas above the permanent water surface. In order to keep them alive and functioning, proper hydroperiods must be maintained. Creating a wetland near development is likely to have difficulty in maintaining the hydroperiod due to the lack of baseflow and distance from the water table.

3.2.5 Using Other or New Structural Stormwater Controls

Innovative technologies may be allowed, providing there is sufficient documentation as to their effectiveness and reliability. The City will not allow any such technologies without independently derived information concerning performance, maintenance, application requirements and limitations.

More specifically, new structural stormwater control designs will not be accepted for inclusion in the Manual until independent pollutant removal performance monitoring data determine that the practice can meet the TSS and other selected pollutant concentration removal targets, and that the structural control conforms with local and/or State criteria for treatment, maintenance, and environmental impact.

3.2.6 Structural Stormwater Control Pollutant Removal Capabilities

General and limited application structural stormwater controls are intended to provide water quality treatment for stormwater runoff. Though each of these structural controls provides pollutant removal capabilities, the relative capabilities vary between structural control practices and for different pollutant types.

Pollutant removal capabilities for a given structural stormwater control practice are based on a number of factors including the physical, chemical and/or biological processes that take place in the structural control and the design and sizing of the facility. In addition, pollutant removal efficiencies for the same structural control type and facility design can vary widely depending on the tributary land use and area, incoming pollutant concentration, rainfall pattern, time of year, maintenance frequency and numerous other factors.

To assist the designer in evaluating the relative pollutant removal performance of the various structural control options, Appendix J provides design removal efficiencies for each of the general and limited application control practices. It should be noted that these values are conservative average pollutant reduction percentages for design purposes derived from sampling data, modeling and professional judgment. A structural control design may be capable of exceeding these performances, however the values in the table are minimum reasonable values that can be assumed to be achieved when the structural control is sized, designed, constructed and maintained in accordance with recommended specifications in this Manual.

Where the pollutant removal capabilities of an individual structural stormwater control are not deemed sufficient for a given site application, additional controls may be used in series in a “treatment train” approach. More detail on using structural stormwater controls in series is provided in Section 3.2.8.

For additional information and data on the range of pollutant removal capabilities for various structural stormwater controls, the reader is referred to the National Pollutant Removal Performance Database (2nd Edition) available at:

www.cwp.org
www.bmpdatabase.org

3.2.7 Structural Stormwater Control Selection

General Application Control Screening Process

Outlined below is a screening process for General Application structural stormwater controls. This process is intended to assist the site designer and design engineer in the selection of the most appropriate structural controls for a development site, and provides guidance on factors to consider in their location.

In general the following four criteria must be evaluated in order to select the appropriate structural control(s) or group of controls for a development:

- Stormwater Treatment Suitability
- Water Quality Performance
- Site Applicability
- Implementation Considerations

In addition, for a given site, the following factors must be considered and any specific design criteria or restrictions need to be evaluated:

- Physiographic Factors
- Soils
- Special Watershed or Stream Considerations

Finally, environmental regulations that may influence the location of a structural control on site, or may require a permit, need to be considered.

[Section 3.1.3 of the GSMM](#) provides a detailed selection process for comparing and evaluating various general application structural stormwater controls using two screening matrices and a list of location and permitting factors. Those tools can assist the design engineer in selecting the subset of structural controls that will meet the stormwater management and design objectives for a development site or project.

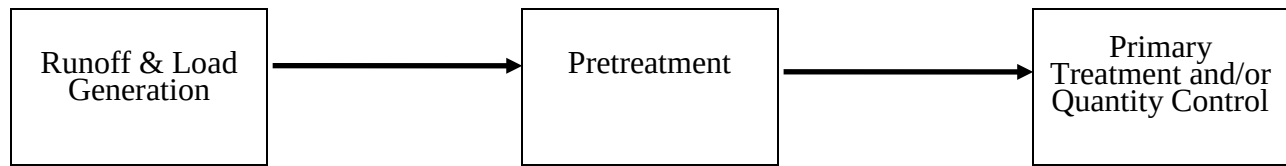
3.2.8 Using Structural Stormwater Controls in Series

The following subsections provide a general description of how BMPs in series can be used to meet water quality goals, and the appropriate manner in which to calculate their cumulative effect on removing pollutants.

3.2.8.1 General Methodology

Stormwater Treatment Trains

The minimum stormwater management standards are an integrated planning and design approach, sometimes called a stormwater “treatment train”. A treatment train consists of all the design concepts and nonstructural and structural controls that work to attain water quality and quantity goals. This is illustrated in Figure 3.1.

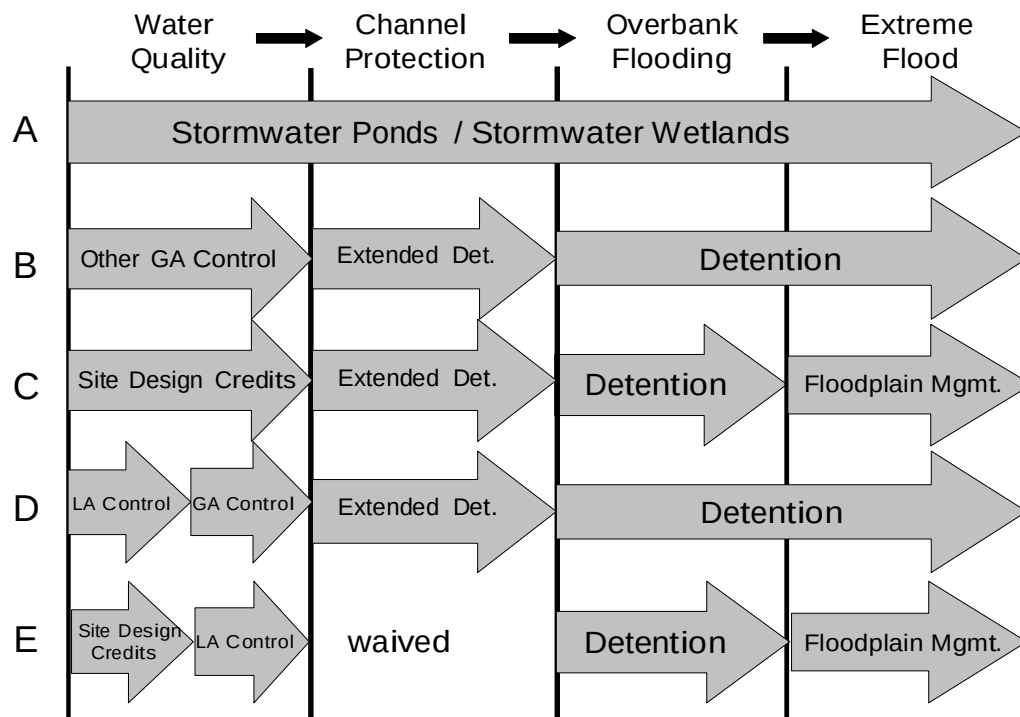
Figure 3.1: Generalized Stormwater Treatment Train

Runoff and Load Generation – The initial part of the “train” is located at the source of runoff and pollutant load generation, and consists of better site design and pollution prevention practices that reduce runoff and stormwater pollutants.

Pretreatment – The next step in the treatment train consists of pretreatment measures. These measures typically do not provide sufficient pollutant removal to meet the 80% TSS reduction goal, but do provide calculable water quality benefits that may be applied towards meeting the WQv treatment requirement.

Primary Treatment and/or Quantity Control – The last step is primary water quality treatment and/or quantity (channel protection, overbank flood protection, and/or extreme flood protection) control.

Many combinations of structural controls in series may exist for a site. Figure 3.2 provides a number of hypothetical examples of how the unified stormwater sizing criteria may be addressed by using structural stormwater controls.

Figure 3.2 Examples of Structural Controls Used in Series

Referring to Figure 3.2 by line letter:

- A.** Two general application (GA) structural controls, stormwater ponds and stormwater wetlands, can be used to meet all of the unified stormwater sizing criteria in a single facility.
- B.** The other general application structural controls (bioretention, sand filters, infiltration trench and enhanced swale) are typically used in combination with detention controls to meet the unified stormwater sizing criteria. The detention facilities are located downstream from the water quality controls either on-site or combined into a regional or neighborhood facility.
- C.** Line C indicates the condition where an environmentally sensitive large lot subdivision has been developed that can be designed so as to waive the water quality treatment requirement altogether. However, detention controls may still be required for downstream channel protection, overbank flood protection and extreme flood protection.
- D.** Where a limited application (LA) structural control does not meet the 80% TSS removal criteria, another downstream structural control must be added. For example, urban hotspot land may be fit or retrofit with devices adjacent to parking or service areas designed to remove petroleum hydrocarbons. These devices may also serve as pre-treatment devices removing the coarser fraction of sediment. One or more downstream structural controls is then used to meet the full 80% TSS removal goal, and well as water quantity control.
- E.** In line E site design credits have been employed to partially reduce the water quality volume requirement. In this case, for a smaller site, a well designed and tested Limited Application structural control provides adequate TSS removal while a dry detention pond handles the overbank flooding criteria. For this location, direct discharge to a large stream and local downstream floodplain management practices have eliminated the need for channel protection volume and extreme flood protection structural controls on site.

3.2.8.2 Calculation of Pollutant Removal for Structural Controls in Series

For two or more structural stormwater controls used in combination, it is often important to have an estimate of the pollutant removal efficiency of the treatment train. Pollutant removal rates for structural controls in series are not additive. For pollutants in particulate form, the actual removal rate (expressed in terms of percentage of pollution removed) varies directly with the pollution concentration and sediment size distribution of runoff entering a facility.

For example, a stormwater pond facility will have a much higher pollutant removal percentage for very turbid runoff than for clearer water. When two stormwater ponds are placed in series, the second pond will treat an incoming particulate pollutant load very different from the first pond. The upstream pond captures the easily removed larger sediment sizes, passing on an outflow with a lower concentration of TSS but with a higher proportion of finer particle sizes. Hence, the removal capability of the second pond for TSS is considerably less than the first pond. Recent findings suggest that the second pond in series can provide as little as half the removal efficiency of the upstream pond.

To estimate the pollutant removal rate of structural controls in series, a method is used in which the removal efficiency of a downstream structural control is reduced to account for the pollutant removal of the upstream control(s). The following steps are used to determine the pollutant removal:

- For each drainage area list the structural controls in order, upstream to downstream, along with their expected average pollutant removal rates from Appendix J for the pollutants of concern.

- For cases where a limited application control is sited upstream from a general application control in the treatment train, the downstream general application structural control is given full credit for removal of pollutants.
- For any general application structural control located downstream from another general application control or a limited application structural control that has TSS removal rates equivalent to 80%, the designer should use half (i.e. 40% removal rate) of the normal pollutant removal rate for the second control in series. The reason for reducing the downstream BMP removal rate to half of its normal rate is that:
 - o The larger particles, which are easier to trap, were removed by the upstream BMP
 - o The remaining particles, which are smaller and harder to trap, remain for the downstream BMP and thereby reduce its effective removal rate
- For a general application structural control located downstream from a limited application structural control that cannot achieve the 80% TSS reduction goal the designer should use 75% of the normal pollutant removal rate for the second control in series.

Example:

TSS is the pollutant of concern and a stormwater pond is designed at the site outlet. A second stormwater pond is located downstream from the first one in series. If each pond has a normal removal rate of 80%, what is the total TSS removal rate? The following information is given:

- o Control 1 (Stormwater Pond 1) = 80% TSS removal (use 1.0 x design removal rate)
- o Control 2 (Stormwater Pond 2) = 40% TSS removal (use 0.5 x design removal rate)

Then applying the controls in order and working in terms of “units” of TSS starting at 100 units:

For Control 1: 100 units of TSS * 80% removal rate

- o 80 units removed; 20 units remaining

For Control 2: 20 units of TSS * 40% removal rate

- o 8 units removed; 12 units remaining

For the treatment train in total:

- o We started with 100 units; 12 units remain
- o 88 units were removed = 88% removal rate

3.2.9 On-Line Versus Off-Line Structural Controls

Structural stormwater controls are designed to be either “on-line” or “off-line.” On-line facilities are designed to receive, but not necessarily control or treat, the entire runoff volume up to the Q_{25} or Q_{100} event. On-line structural controls must be able to handle the entire range of storm flows.

Off-line facilities on the other hand are designed to receive only a specified flow rate through the use of a flow regulator (i.e. diversion structure, flow splitter, etc). Flow regulators are typically used to divert the water quality volume (WQv) to an off-line structural control sized and designed to treat and control the WQv. After the design runoff flow has been treated and/or controlled it is returned to the conveyance system. Figure 3.3 provides an example of an off-line sand filter and an off-line enhanced dry swale.

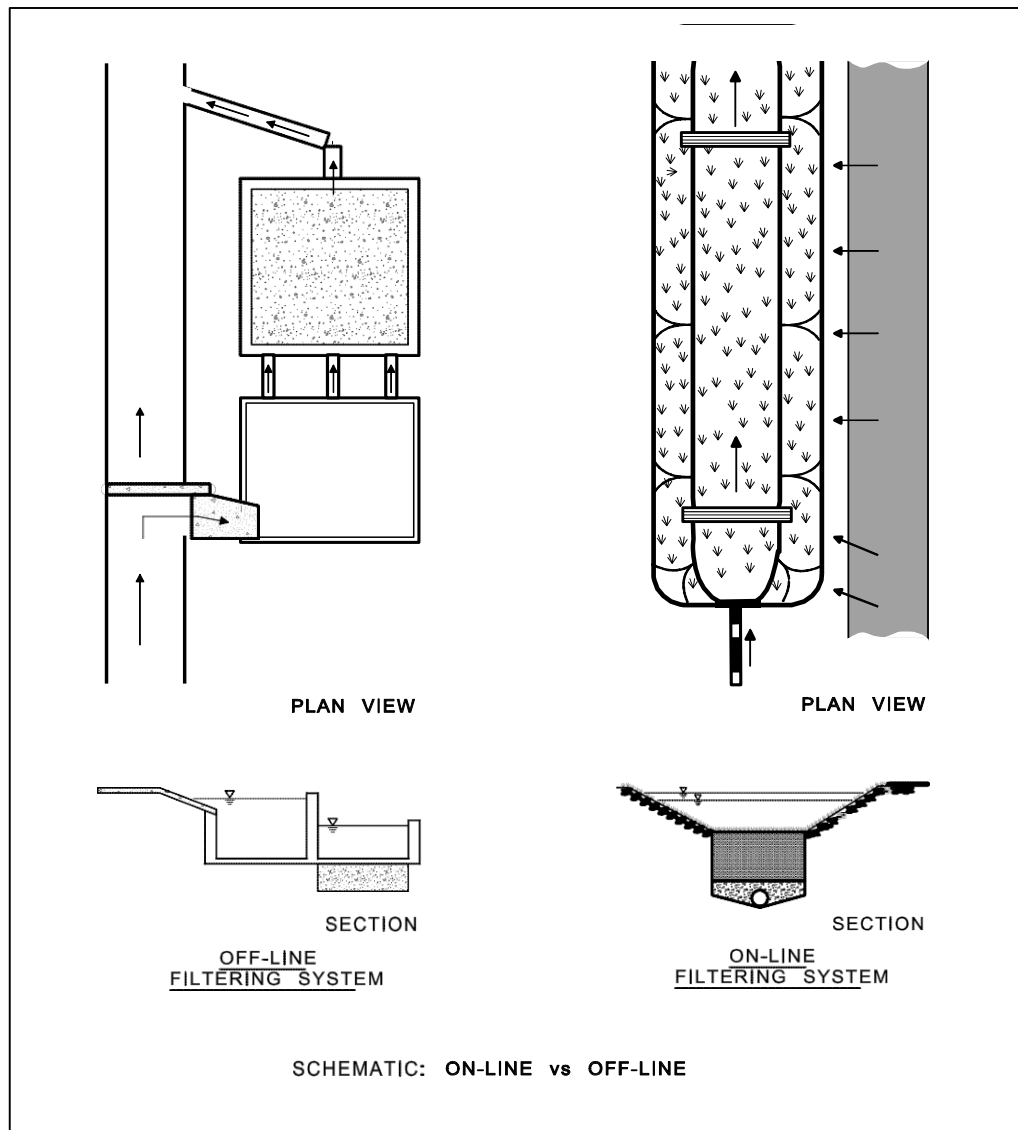


Figure 3.3 Example of On-Line versus Off-Line Structural Controls
(Source: CWP, 1996)

Flow regulation to off-line structural stormwater controls can be achieved by either:

- Diverting the water quality volume or other specific maximum flow rate to an off-line structural stormwater control, or
- Bypassing flows in excess of the design flow rate

The peak water quality flow rate (Q_{WQ}) can be calculated using the procedure found in Chapter 2.

Flow regulators can be flow splitter devices, diversion structures, or overflow structures (See Figures 3.4-3.6).

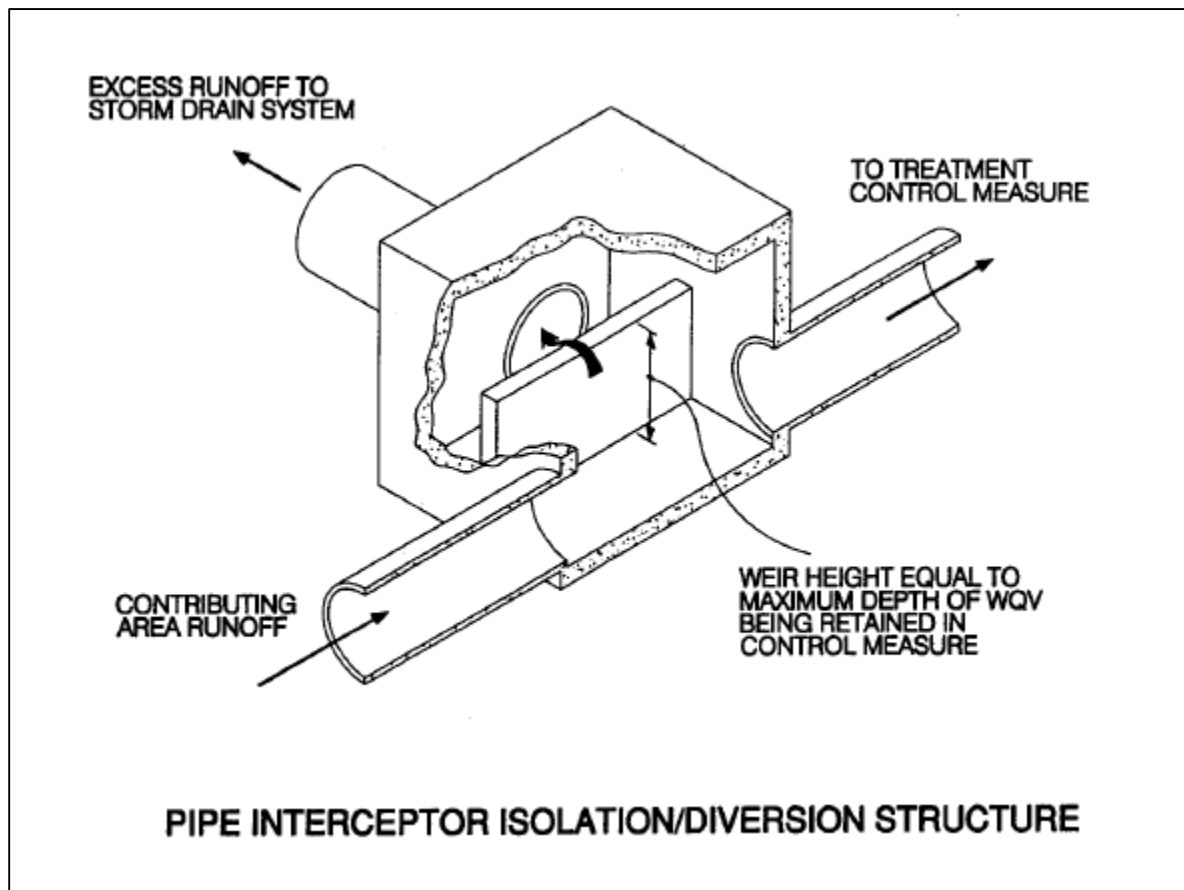


Figure 3.4 Pipe Interceptor Diversion Structure
(Source: City of Sacramento, 2000)

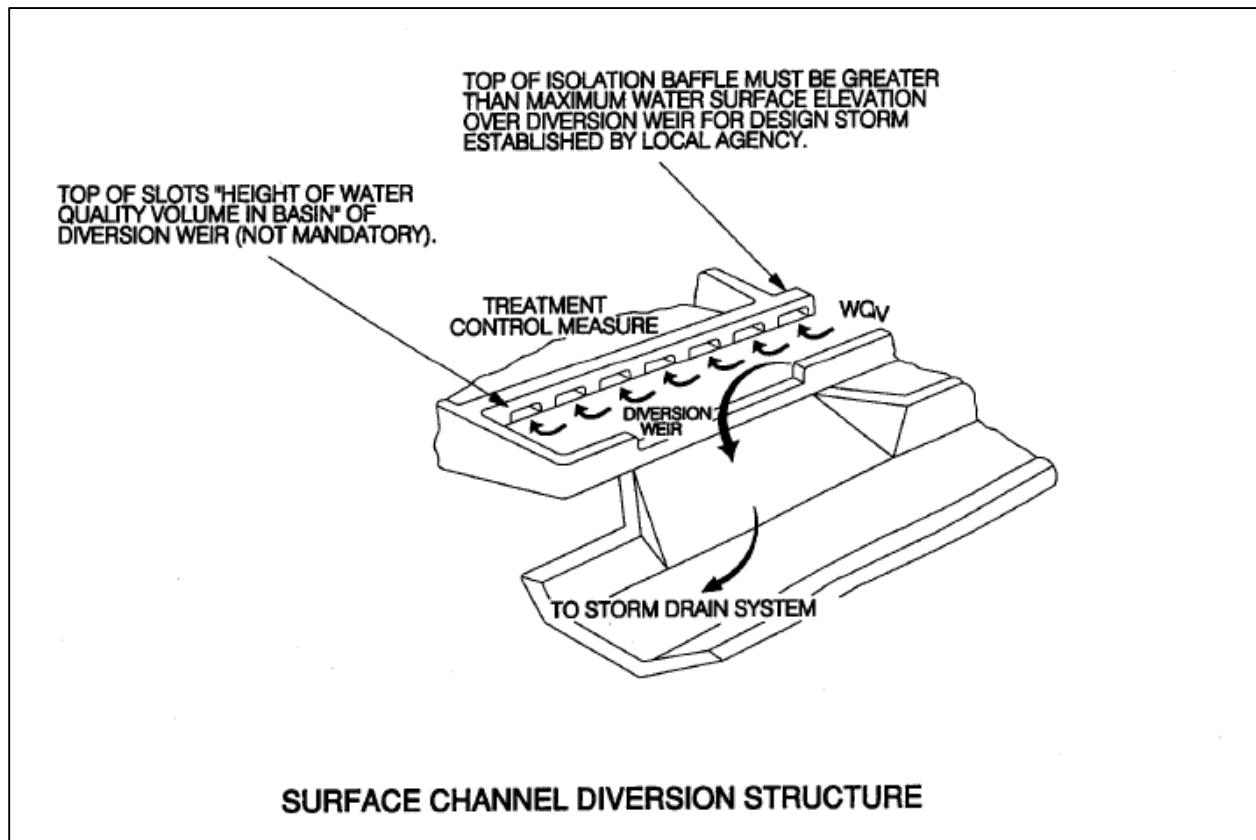


Figure 3.5 Surface Channel Diversion Structure
(Source: City of Sacramento, 2000)

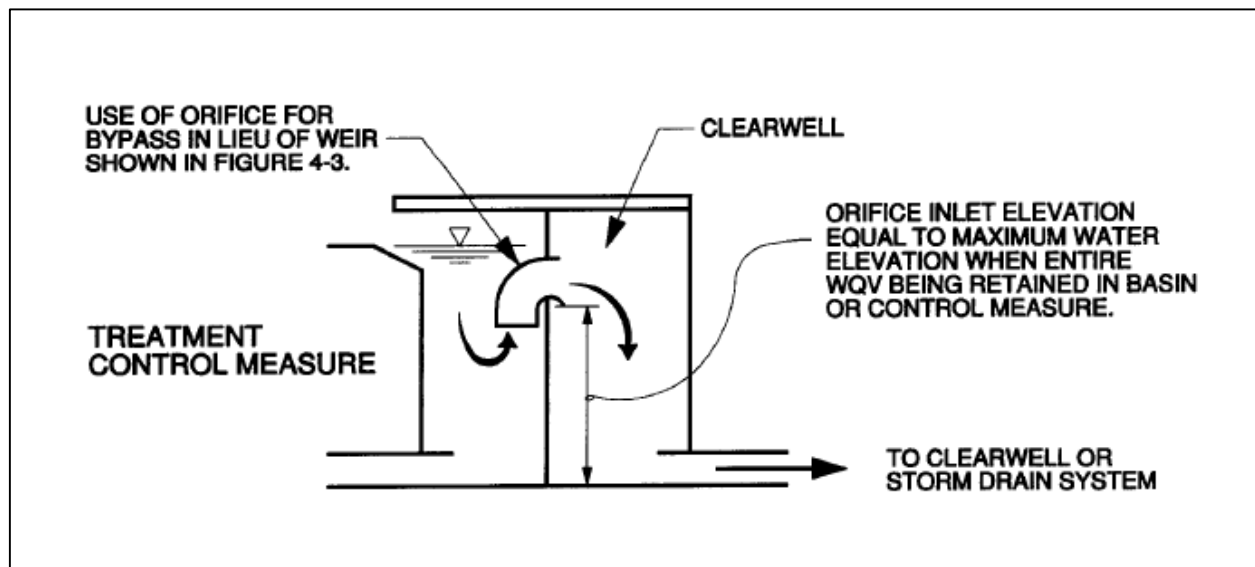


Figure 3.6 Outlet Flow Regulator
(Source: City of Sacramento, 2000)

Chapter 4 – Site Design Stormwater Credits

A set of stormwater “credits” has been developed to provide developers and site designers an incentive to implement better site design practices that can reduce the volume of stormwater runoff and minimize the pollutant loads from a site. The credit system directly translates into cost savings to the developer by allowing for a reduction in the water quality treatment volume (WQv). This also reduces the size of structural stormwater control and conveyance facilities for events greater than the water quality treatment (WQv) event.

The better site design practices that provide stormwater credits are listed in Table 4.1. Site-specific conditions will determine the applicability of each credit. For example, stream buffer credits cannot be taken on upland sites that do not contain perennial or intermittent streams.

Note: better site design practices and techniques that reduce the overall impervious area on a site already implicitly reduce the total amount of stormwater runoff generated by a site (and thus reduce WQv) and are not further credited under this system.

Table 4.1 Summary of Better Site Design Practices Providing Stormwater Volume Credits	
Practice	Description
Natural area conservation	Undisturbed natural areas are conserved on a site, thereby retaining their pre-development hydrologic and water quality characteristics.
Stream buffers	Stormwater runoff is treated by directing sheet flow runoff through a naturally vegetated or forested buffer as overland flow.
Use of vegetated channels	Vegetated channels are used to provide stormwater treatment.
Overland flow filtration/infiltration zones	Overland flow filtration/infiltration zones are incorporated into the site design to receive runoff from rooftops and other small impervious areas.

For each potential credit, there is a minimum set of criteria and requirements (e.g., flow length, contributing area, etc.) which identify the conditions or circumstances under which the credit may be applied. Site designers are encouraged to utilize as many credits as they can on a site. Greater reductions in stormwater storage volumes can be achieved when many credits are combined (e.g., disconnecting rooftops and protecting natural conservation areas). However, credits cannot be claimed twice for an identical area of the site (e.g. claiming credit for stream buffers and conservation area over the same site area).

Note: Due to local safety codes, soil conditions, and topography, some of these site design credits may be restricted. Designers are encouraged to consult with the City to ensure if and when a credit is applicable and to determine restrictions on non-structural strategies.

4.1 Stormwater Credits and the Site Planning Process

During the site planning process ([see Section 1.5 of the GSMM](#)) the integration of site design credits can be integrated with this process as shown in Table 4.2.

Table 4.2 Integration of Site Design Credits with Site Development Process	
Site Development	Site Design Credit Activity
Feasibility Study	• Determine stormwater management requirements • Perform site reconnaissance to identify potential areas for and types of credits
Site Analysis	• Identify and delineate natural feature conservation areas (natural areas and stream buffers)
Concept Plan	• Preserve natural areas and stream buffers during site layout • Reduce impervious surface area through various techniques • Identify locations for use of vegetated channels and groundwater recharge • Look for areas to disconnect impervious surfaces • Document the use of site design credits.
Preliminary and Final Plan	• Perform layout and design of credit areas – integrating them into treatment trains • Ensure unified stormwater sizing criteria are satisfied • Ensure appropriate documentation of site design credits according to local requirements.
Construction	• Ensure protection of key areas • Ensure correct final construction of areas needed for credits
Final Inspection	• Develop maintenance requirements and documents • Ensure long term protection and maintenance • Ensure credit areas are identified on final plan and plat if applicable

Site Design Credit #1: Natural Area Conservation

A stormwater credit can be taken when undisturbed natural areas are conserved on a site, thereby retaining their pre-development hydrologic and water quality characteristics. Under this credit, a designer would be able to subtract conservation areas from total site area when computing water quality volume requirements and adhering to the criteria listed below. An added benefit will be that the post-development peak discharges will be smaller, and hence water quantity control volumes (CP_V , Q_{25} , and Q_{100}) will be reduced due to lower post-development curve (CN) numbers.

Rule: Subtract conservation areas from total site area when computing water quality volume requirements.

Criteria:

- Conservation area cannot be disturbed during project construction
- Shall be protected by limits of disturbance clearly shown on all construction drawings
- Shall be located within an acceptable conservation easement instrument that ensures perpetual protection of the proposed area.
- The easement must clearly specify how the natural area vegetation shall be managed and boundaries will be marked
- Managed turf (e.g., playgrounds, regularly maintained open areas) is not an acceptable form of vegetation management], and shall have a minimum contiguous area requirement of 10,000 square feet
- R_V is kept constant when calculating WQ_V

Example: Residential Subdivision
 Area = 38 acres
 Natural Conservation Area = 7 acres
 Impervious Area = 13.8 acres

$$R_V = 0.05 + 0.009 (I) = 0.05 + 0.009 (36.3\%) = 0.37$$

Credit:

7.0 acres in natural conservation area
 New drainage area = $38 - 7 = 31$ acres

Before credit:

$$WQ_V = (1.2)(0.37)(38)/12 = 1.40 \text{ ac-ft}$$

With credit:

$$WQ_V = (1.2)(0.37)(31)/12 = 1.15 \text{ ac-ft}$$

(18% reduction in water quality volume)

Site Design Credit #2: Stream Buffers

This credit can be taken when stormwater runoff is effectively treated by a stream buffer. Effective treatment constitutes treating runoff through overland flow in a naturally vegetated or forested buffer. Under the proposed credit, a designer would be able to subtract areas draining via overland flow to the buffer from total site area when computing water quality volume requirements. In addition, the volume of runoff draining to the buffer can be subtracted from the channel protection volume. The design of the stream buffer treatment system must use appropriate methods for conveying flows above the annual recurrence (1-yr storm) event, and adhere to the criteria listed below.

Rule: Subtract areas draining via overland flow to the buffer from total site area when computing water quality volume requirements.

Criteria:

- The minimum undisturbed buffer width shall be 50 feet, or as required by the City's Buffer Ordinance, whichever is greater.
- The maximum contributing length shall be 150 feet for pervious surfaces and 75 feet for impervious surfaces
- The average contributing slope shall be 3% maximum unless a flow spreader is used
- Runoff shall enter the buffer as overland sheet flow. A flow spreader can be supplied to ensure this, or if average contributing slope criteria cannot be met
- Not applicable if overland flow filtration/groundwater recharge credit is already being taken
- Buffers shall remain unmanaged other than routine debris removal
- R_V is kept constant when calculating WQ_V

Example: Residential Subdivision
 Area = 38 acres
 Impervious Area = 13.8 acres
 Area Draining to Buffer = 5 acres

$$R_V = 0.05 + 0.009 (I) = 0.05 + 0.009 (36.3\%) = 0.37$$

Credit:

5.0 acres draining to buffer

New drainage area = $38 - 5 = 33$ acres

Before credit:

$$WQ_V = (1.2)(0.37)(38)/12 = 1.40 \text{ ac-ft}$$

With credit:

$$WQ_V = (1.2)(0.37)(33)/12 = 1.22 \text{ ac-ft}$$

(13% reduction in water quality volume)

Site Design Credit #3: Vegetated Channels

This credit may be taken when vegetated (grass) channels are used for water quality treatment. Under the proposed credit, a designer would be able to subtract the areas draining to a grass channel from total site area when computing water quality volume requirements. A vegetated channel can fully meet the water quality volume requirements for certain kinds of low-density residential development (see low impact development credit). An added benefit will be that the post-development peak discharges will likely be lower due to a longer time of concentration for the site.

This credit cannot be taken if grass channels are being used as a limited application structural stormwater control (i.e. not designed to fully meet the design methodology and criteria) towards meeting the pollutant reduction goal for WQ_V treatment.

Rule: Subtract the areas draining to a grass channel from total site area when computing water quality volume requirements.

Criteria:

- The credit shall only be applied to moderate or low density residential land uses (3 dwelling units per acre maximum)
- The maximum flow velocity for water quality design storm shall be less than or equal to feet per second
- The minimum residence time for the water quality storm shall be 5 minutes
- The bottom width shall be a maximum of 6 feet. If a larger channel is needed use of a compound cross section is required
- The side slopes shall be 3:1 (horizontal:vertical) or flatter
- The channel slope shall be 3 percent or less
- R_V is kept constant when calculating WQ_V

Example: Residential Subdivision
Area = 38 acres
Impervious Area = 13.8 acres

$$R_V = 0.05 + 0.009 (I) = 0.05 + 0.009 (36.3\%) = 0.37$$

Credit:

12.5 acres meet grass channel criteria
New drainage area = 38 – 12.5 = 25.5 acres

Before credit:

$$WQ_V = (1.2)(0.37)(38)/12 = 1.40 \text{ ac-ft}$$

With credit:

$$WQ_V = (1.2)(0.37)(25.5)/12 = 0.94 \text{ ac-ft}$$

(33% reduction in water quality volume)

Site Design Credit #4: Overland Flow Filtration/Groundwater Recharge Zones

This credit can be taken when “overland flow filtration/infiltration zones” are incorporated into the site design to receive runoff from small impervious areas (e.g., driveways, small parking lots, etc). This can be achieved by grading the site to promote overland vegetative filtering or infiltration areas (i.e. rain gardens). If impervious areas are adequately disconnected, they can be deducted from total site area when computing the WQv requirements. An added benefit will be that the post-development peak discharges will likely be lower due to a longer time of concentration for the site.

Rule: If impervious areas are adequately disconnected (i.e. the receiving area has the appropriate soils, surface area, length and slope to filter and/or infiltrate the calculated runoff volume for the water quality event), they can be deducted from total site area when computing the water quality volume requirements.

Criteria:

- Relatively permeable soils (hydrologic soil groups A and B) must be present
- Runoff shall not come from a designated hotspot
- The maximum contributing impervious flow path length shall be 75 feet
- Downspouts shall be 10+ feet away from impervious surface to discourage “re-connections”
- The disconnection shall drain continuously through a vegetated channel, swale, or filter strip to the property line or structural stormwater control
- The length of the “disconnection” shall be equal to or greater than the contributing length
- The entire vegetative “disconnection” shall be on a slope less than or equal to 3 percent
- The imperviousness area to a discharge location is 5,000 square feet or less.
- If draining directly to a buffer the stream buffer credit cannot also be used
- R_V is kept constant when calculating WQv

Example: Site Area = 3.0
 Impervious Area = 1.9 acres (or 63.3% impervious cover)
 “Disconnected” Impervious Area = 0.5 acres

$$R_V = 0.05 + 0.009 (I) = 0.05 + 0.009 (63.3\%) = 0.62$$

Credit:

0.5 acres of surface imperviousness hydrologically disconnected
 New drainage area = $3 - 0.5 = 2.5$ acres

Before credit:

$$WQ_V = (1.2)(0.62)(3)/12 = 0.19 \text{ ac-ft}$$

With credit:

$$WQ_V = (1.2)(0.62)(2.5)/12 = 0.15 \text{ ac-ft}$$

(21% reduction in water quality volume)

4.2 User Fee Crediting Options

The Unified Sizing Criteria (USC) method is hydrology-based, using imperviousness as the key factor in determining the WQ_v and associated stormwater burden on the City. The User Fee is the City's primary funding mechanism for managing stormwater quality associated with impervious areas. Mitigating stormwater quality impacts through the use of Better Site Design and Best Management Practices can reduce the burden on the City and will be rewarded by a reduction in the User Fee, where applicable. To calculate the User Fee Credit for Water Quality Volume Reduction, use the following method:

1. Calculate the WQ_v that is addressed by the site, based on the USC Methodology.
2. Convert the WQ_v to an area by dividing the WQ_v by the water quality rainfall depth of 1.2 inches. This is the area of which water quality impacts will be fully mitigated (by infiltration and/or filtration) - this will be referred to as the WQ_v Impervious Reduction (IR).
3. Identify the amount of physical imperviousness that the site contains, which the User Fee would be based on – this will be referred to as the Impervious Area (IA).
4. Compare the IR and IA values, and generate a % Reduction that is applied to the fee (i.e. $IR/IA = \% \text{ Reduction}$). The % Reduction should be rounded to the nearest whole number. User fee crediting will be capped at a maximum % Reduction of 30%.
5. Multiply the % Reduction by the User Fee (based on Impervious Area) to calculate the final amount of the User Fee.

Chapter 5 – Additional BMP Requirements

5.1 Water Surface Dewatering

When discharging stormwater from temporary sediment basins, sediment ponds, or other similar impoundments, utilize outlet structures that only withdraw water from near the surface of the basin or impoundment, unless infeasible. The outlet structure should be capable of conveying the flow of the 10-year, 24-hour storm event.

Typically referred to as “skimmers,” water surface dewatering devices are designed to improve sediment trapping efficiency by regulating the filling and draining of a stormwater basin or pond. Since these devices float on the water surface, the skimmer orifice has a constant head that allows the basin to drain slowly at a constant rate from the water surface, where sediment concentrations are typically lowest.

Sediment basins and sediment ponds must be designed to consider the specific site conditions, including soil types, drainage area, sediment generated, rainfall, runoff, and potential risk for downstream impacts. When designing a sediment basin or sediment pond, the engineer should provide appropriate supporting calculations for the skimmer. Several manufacturers of these devices offer design guidance, construction details and specifications.

Appendices

A. Design Aids

- Calculation Worksheets
 - Volume Calculation Tool
 - BMP Sizing Tools for:
 - Bioretention
 - Infiltration Trench
 - Dry Enhanced Swale
 - Grass Filter Strip
 - Porous Surfaces
- Standard CAD Details and Notes/Specs
 - Bioretention
 - Infiltration Trench
 - Dry Enhanced Swale
 - Grass Filter Strip
 - Micropool Extended Dry Detention Pond
 - Wet Detention Pond

B. Maintenance Schedules

C. Flood Area Map

Appendix C: Flood Area Map



EXHIBIT B-3**Rocky Branch and Rocky Branch Watershed Improvements**

The Buyer, its successors and assigns, shall make necessary improvements to the Bluff Road railroad embankment, remove the railroad trestle downstream of Olympia Avenue and enlarge the Olympia Avenue culvert crossing to enhance water quality and improve flooding conditions in the area to a degree that is acceptable to the Buyer, Seller, and County and as recommended in the Urban Study of the Rocky Branch Watershed by AMEC Environmental & Infrastructure, Inc. dated June 1, 2012, a copy of which is attached as Exhibit B-4 hereto and incorporated herein by specific reference thereto and as set forth in the motion approved by Columbia City Council on June 5, 2012, a copy of which is attached hereto as Exhibit ## and incorporated herein by specific reference thereto.

Buyer, Seller, and the County shall work together to create the optimum flooding, drainage, and water quality situation from Assembly street to the Congaree River. In addition to the three improvements specifically set forth in the previous paragraph, the Buyer shall facilitate and pay for all surveying, plans, permitting, and design of the improvements. In addition, the Buyer shall use its best efforts to perform any mitigation required by DHEC or the Army Corp of Engineers, for the Buyer's relocation of the onsite stream, within Rocky Branch.



Urban Study

EXHIBIT B-4

Rocky Branch Watershed
Columbia, South Carolina

Prepared for:
City of Columbia
1136 Washington Street
Columbia, SC 29217

Prepared by:
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June 1, 2012

Project No. 6250-12-0007



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Executive Summary

The purpose of this study is to examine the Assembly Street site with respect to the proposed commercial development to determine the potential impacts that the development could have on the adjacent Rocky Branch. Rocky Branch currently has significant flooding and water quality problems and the effects of developing a large property adjacent to the stream must be studied to determine the potential impacts. When proposed project improvements potentially encroach on a regulatory floodway, the City of Columbia requires a demonstration that these improvements will not raise (ie, no rise) the off-site base flood elevations (BFE) along the waterway. The base flood elevation is defined as the 1% annual chance flood which means it has a one percent chance of occurrence in any given year, also referred to as the 100-year flood.

In addition to modeling the potential hydrologic and hydraulic impacts of the proposed commercial development, other scenarios were examined to identify opportunities to address flooding and water quality problems within Rocky Branch. The study results indicate that the proposed development of the project site could be implemented without significant impacts to the Rocky Branch watershed. Furthermore, immediate opportunities exist to alleviate localized flooding and water quality problems, and long term opportunities exist to develop a comprehensive plan for improving flooding and water quality problems throughout the watershed.

1. Introduction

The City of Columbia contracted AMEC Environment and Infrastructure, Inc. (AMEC) to conduct a study of the urban development impact to the Rocky Branch waterway and drainage basin as a result of the proposed development at 301 Assembly Street, Columbia, SC (project site). The goal of this assignment was to assess the potential hydrologic, hydraulic and water quality impact that the proposed development at the project site could have on the waterway and drainage basin.

1.2 Project Description

Rocky Branch is an urban stream that runs through downtown Columbia, approximately four miles in length, beginning in the Martin Luther King Park area. Rocky Branch flows through and under the Five Points area, through the University of South Carolina campus (USC), past the proposed development just south of Assembly Street, into the Olympia neighbourhood and eventually into the Congaree River. While the majority of Rocky Branch is a channelized urban stream with limited floodplain access, portions of the stream are piped under the Five Points area.

The project site located at 301 Assembly Street is currently a baseball park owned in part by the City of Columbia. The proposed development of the site would likely include the construction of a shopping center with approximately 186,000 square feet of retail stores and approximately 400,000 square feet of parking and other impervious surfaces. The site lies to the southeast of Rocky Branch near the intersection of Assembly Street and Ferguson Street. According to the latest Flood Insurance Rate Map (FIRM) for Richland County dated February 20, 2002, the proposed development would be located within the floodplain. However, the site is not shown to be encroaching in to the regulatory floodway, based on the information available to AMEC. FEMA is currently in the process of revising the floodplain map, which is scheduled to be completed by the end of 2012.

1.2.1 Available data and models

A complete list of the numerous documents reviewed for this study is included in the Appendix.

Among these documents, the Conceptual Site Plan by Freeland and Kauffman, dated 12/14/11, was used to model the proposed site development as directed by the City of Columbia. AMEC also evaluated the following available models:

- Rocky Branch FEMA Flood Insurance Study (FIS), which was conducted in the late 1970s, available as a PDF printout of a HEC-2 model.
- Parson Brinckerhoff (PB) HEC-RAS models showing 5 different scenarios/alternatives of potential modifications to Rocky Branch.
- Pace Engineering study which appears to be based on a HEC-2 model.

AMEC also obtained recent LiDAR data from the U.S. Geological Survey (USGS).

1.3 Regulatory Floodplain Mapping

The current effective regulatory information for Rocky Branch Watershed is outlined in the Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) for Richland County, South Carolina And Incorporated Areas. This published FIS data consists of:

- Flood Insurance Rate Map (FIRM): Panel 94 of 275. Map Number: 45079C0094 H (Dated February 20, 2002).
- FIS Report (Volume 1 and 2): Dated September 29, 2010.

The FIS report (Volume 1) lists the Summary of Discharges for Rocky Branch as outlined in Table 1 below:

Table 1: Effective Summary of Discharges (Source: FEMA FIS Report)

	Drainage Areas (Square Miles)	Peak Discharges (cfs)			
		10-year	50-year	100-year	500-year
At Mouth	3.7	2,210	3,190	3,550	4,780
At Southern Railway	2.9	2,110	3,020	3,360	4,430

The dates listed in the published FIS are indicative of updates to adjacent watersheds and flooding sources in Richland County and its Incorporated Areas. However, the FIS did not indicate that Rocky Branch was re-studied, which explains why the effective Hydrologic and Hydraulic (H&H) study for Rocky Branch watershed traces back to the first effective FIS for the City of Columbia (September 1, 1983). In this first FIS, the hydraulic analyses were conducted in detail using U.S. Corp of engineers (HEC-2) software (Updated release August, 1977) which uses step-backwater method of calculation. HEC-2 is the predecessor of the HEC-RAS hydraulic model which is currently approved and preferred for use in most riverine hydraulic analyses submitted to FEMA.

AMEC obtained a scanned PDF copy of HEC-2 model for Rocky Branch (Run executed on July 17, 1979) and verified that the flows used in the HEC-2 model are consistent with the ones in the current FIS Report listed in Table 1 above. Therefore, the flows listed in Table 1 above were computed in the late 1970s and are the only FEMA regulated flows in the Rocky Branch Drainage Basin.

The current FIS Report mentions that the computed Special Flood Hazard Areas (SFHAs) were re-delineated for streams that were not re-studied (i.e., Rocky Branch). Consequently this means the FIRM map (dated February 20, 2002) already has the needed datum conversions (from NGVD29 to NAVD88) and also has the proper re-mapping of the SFHAs using up-to-date topographic information (at the time of production). This is consistent with FEMA's practice of

updating old models and maps to reference the elevations from the old National Geodetic Vertical Datum (NGVD 29) to the North American Vertical Datum (NAVD 88). This type of update does not include any updated underwater channel topographical survey nor does it include any update to the previously computed peak flood flows which are expected to increase due to urbanization.

The SFHAs are defined as the area that will be inundated by the flood event having a 1-percent chance of being equalled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood.

The proposed project area is within the FIRM SFHA. Attachment-A illustrates portions of the FIRM (FIRMettes) for this reach of Rocky Branch. Downstream of Assembly Street, the regulated computed Base Flood Elevation (BFE) from the HEC-2 model output (FIS profile Panel Number 120P) is 172.3 feet above mean sea level based on the NAVD88 datum while the mapped BFE (rounded) in the FIRM at the proposed development site is 173.0 feet (NAVD88).

1.4 Hydrology

As mentioned above, the effective flows (Table-1) used in the current FIS were based on late 1970s conditions of the Rocky Branch watershed. The Rocky Branch watershed has been subjected to many significant changes (i.e., landcover, landuse, grading, development...etc.) through the years. Therefore, the original flows needed to be updated to reflect the effective imperviousness of the watershed, which has increased. This section details the updates that were made to the flows by other parties, and the extent to which AMEC used that information for the goals of this project.

PB Americas, Inc. in conjunction with MA Engineering Consultants, Inc. was contracted by the City of Columbia to perform updated hydrologic and hydraulic studies of the Rocky Branch Watershed. This updated analysis was finalized in models and a report submitted to the City in October 2007. In this report, we refer to this updated analysis as the PB Study.

The PB Study based its analysis on comprehensive work conducted by the US Army Corps of Engineers (USACE), Charleston District in 2000. In this report, we refer to this work done by the USACE as the USACE Study.

The USACE constructed a comprehensive new hydrologic model of Rocky Branch Watershed using the USACE Hydrologic Engineering Center's Hydrologic Modelling System (HEC-HMS) model. The USACE HEC-HMS model was based on the existing conditions of the watershed which would have been the late 1990s. Due to land development and changes in Rocky Branch Watershed, PB Americas, Inc. updated the USACE HEC-HMS model while maintaining its original model configuration (See Figure-1). After comparing the USACE and PB Studies, only minor changes were noted to the overall drainage area (i.e. 0.008 square-mile difference) and no significant changes to the USACE flows were made).

AMEC performed cursory reviews of the PB Study and inspected its schematic components, connectivity, data input and executions. After inspecting the entire watershed with the most current aerial imagery (using Microsoft Bing), no changes were noted and there was no need to change the PB Study. However, AMEC updated the PB Study which was based on version 3.1.0 of HEC-HMS (Released November 2006) to version 3.5 which is the most recent available release (August 2010). Comparing the results of the two HEC-HMS versions (3.1.0 and 3.5), no differences were noted in the computed flows. Therefore, AMEC used the flows from the PB Study to analyze the current existing conditions of the Watershed.

Figure 1: HMS Schematic of Rocky Branch Watershed

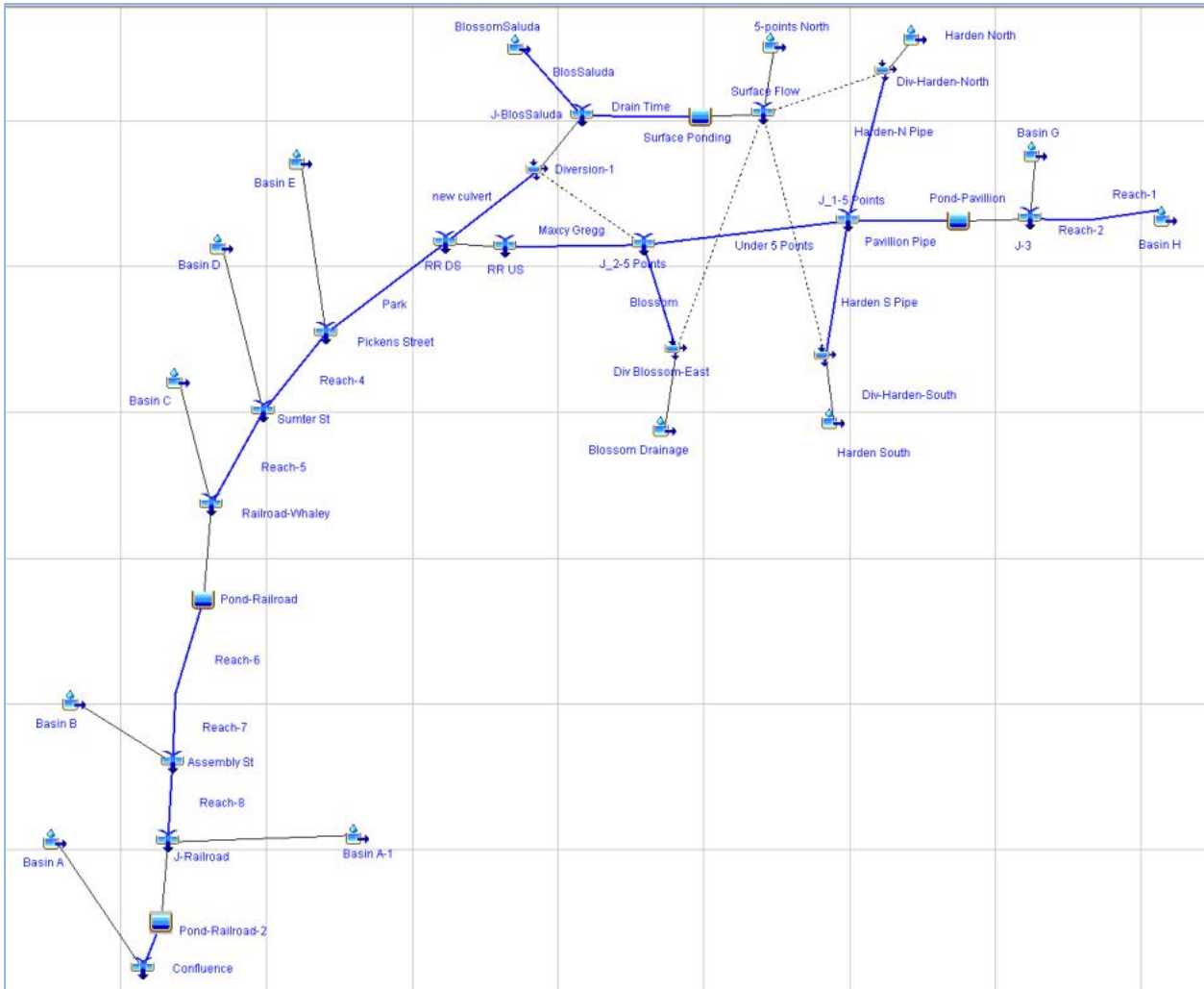


Table 2 below shows the existing peak discharges within the study reach as taken from the PB Study (2, 5, 10, 25, 50 and 100-year return interval floods which have a 50%, 20%, 10%, 4%, 2% and 1% annual chance of occurrence in any given year, respectively). The peak flows for the 1-year event were added by AMEC while analyzing the watershed response to other storm frequencies:

Table 2: Peak Flow Discharges of the Current Existing Conditions

HMS Location	1-year	2-year	5-year	10-year	25-year	50-year	100-year
Sumter Street	1,045	1,436	2,014	2,442	2,982	3,469	3,964
Assembly Street	1,218	1,653	2,320	2,843	3,503	4,062	4,621
J-Railroad (Railroad D/S of Bluff Rd)	1,241	1,700	2,417	2,972	3,692	4,305	4,927
Confluence with Congaree River	1,329	1,842	2,616	3,117	3,668	4,053	4,425

The rainfall events (2, 5, 10, 25, 50 and 100-year) in the PB Study are from the Richland County Climate Report (No. G32). In this Climate Report, the frequency of the 1-year rainfall event is not included.

The newly added 1-year frequency of rainfall event was taken from the National Oceanic and Atmospheric Administration (NOAA) using Atlas 14, Volume 2 and Version 3. The data is listed in Table 3 below:

Table 3: Precipitation Frequency Estimate for 1-year Event (90% Annual Chance)

Duration	5-min	15-min	1-hr	2-hr	3-hr	6-hr	12-hr	24-hr
Depth (Inch)	0.451	0.90	1.54	1.77	1.86	2.21	2.58	3.0

1.5 Hydraulic Modeling

Two kinds of technical evaluations are used for proposed development in a floodplain. All proposed floodplain development must meet the "no adverse effect" criteria, while proposed floodway development must also meet the "no-rise" criteria. For streams with detailed studies

(FEMA AE-zones) and established BFEs, the 100-year floodplain has been divided into two zones: the floodway and the floodway fringe. The floodway is that area that must be kept open to convey flood waters downstream. The floodway fringe is that area that can be developed in accordance with FEMA standards as adopted by local ordinances. Based on the information that AMEC was able to attain, the proposed filling of the development site appears to be located outside the floodway boundary of the regulated floodplain (Attachment-A: FIRMettes).

Effective Model

As mentioned earlier, the effective hydraulic model of Rocky Branch Watershed was developed in the late 1970s using the USACE HEC-2 Computer Software. A copy of the PDF printout of this model (input and output data) is included for the multiple and floodway runs (See Attachment B). The current FIS (Map and Report) for the study area uses the elevations generated from this model after converting the datum to NAVD88. The peak discharges in this model were listed in Table-1 above. The elevations based on the NAVD88 datum were computed by lowering the NGVD29 elevations by 0.8 feet (See Section 3.3 in the FIS Report Vertical Datum).

The model output printout as provided in Attachment B (See also FIS profile 119P-120P) shows that the BFE downstream of Assembly Street is approximately 172.3 feet (NAVD88) and remains almost the same (for approximately 1,500 feet) until the reach downstream of the Bluff Road railroad embankment located just downstream of Bluff Road.

Duplicate Effective Model

The effective model (HEC-2) was reproduced (with the same data and flows) using the latest U.S. Army Corps of Engineers (HEC-RAS) software, version 4.1.0. This new HEC-RAS model is referred to as the Duplicate Effective Model. Comparisons of output data between the Effective Model (i.e. original FIS published results) and Duplicate Effective Model show changes in flood elevations (increase of 1.7 feet). These changes are attributed to computational differences between succeeding versions of the model software, such as: method of

conveyance calculations, critical depth default, differences in bridge/culvert modeling routines, and many other updates to computational algorithms.

The HEC-RAS User's Manual and the HEC-RAS Hydraulics Reference Manual provide details on computational differences between the HEC-2 and HEC-RAS and guidance on simulating HEC-2 results; such manuals should be consulted to explain the differences between the Effective and Duplicate Effective Models. The HEC-RAS software and manuals can be downloaded from the internet at: (<http://www.hec.usace.army.mil/>). Another useful reference is FEMA's "HEC-RAS Procedures for HEC-2 Modelers," dated April 2002. This publication can be downloaded from FEMA website at: (http://www.fema.gov/fhm/dl_fpmm.shtml).

The original Duplicate Effective Model was constructed by Pace Engineering. The digital model and output printout as provided in Attachment C shows that the BFE downstream of Assembly Street (Section 67.8) is approximately 174.0 feet (NAVD88) and remains almost the same (for approximately 1,500 feet) until downstream of the railroad embankment downstream of Bluff Road.

Existing Condition Model:

The existing HEC-RAS model for Rocky Branch Watershed was developed by USACE (along with their HMS model) and updated by PB Americas, Inc. using HEC-RAS (3.1.3). The PB Study Report (October, 2007) explained the modifications made to the USACE model.

AMEC performed cursory reviews of PB Study and inspected its schematic components, applied flows, data input and executions. After inspecting the overall model, no changes to the PB model were needed as the model reasonably represents the condition of the stream. However, AMEC updated the PB Study from version 3.1.3 of HEC-RAS (Released May 2005) to version 4.1 which is the most recent available release (January 2010).

After comparing the results of the two HEC-RAS versions (3.1.3 and 4.1), negligible differences were noted in the computed elevations within the Study Reach. The new run of HEC-RAS based on Version 4.1 has, in general, had higher elevations comparing to the older release of

HEC-RAS (See Attachment D for a complete table). Table 4 below highlights the differences in BFEs, within the Study Reach, which were limited to +/- 0.01 feet.

Table 4: Difference in computed BFE based on the new release of HEC-RAS

Physical Location	HEC-RAS Stations	100-year Elevations in Feet (NAVD 88)		Difference in Elevations (ft)
		Version 3.1.3	Version 4.1	
Southern Railroad Bridge (Upstream)	6,376	175.39	175.4	-0.01
Southern Railroad Bridge (Downstream)	6,354	175.26	175.26	0
	6,250	175.3	175.31	-0.01
Dreyfuss Street (Upstream)	6,162	175.3	175.31	-0.01
Dreyfuss Street (Downstream)	6,112	175.3	175.3	0
	5,721	175.3	175.3	0
Bluff Road (Upstream)	5,231	175.3	175.3	0
Bluff Road (Downstream)	5,181	175.29	175.29	0
Southern Railroad Culvert (Upstream)	5,166	174.63	174.63	0
Southern Railroad Culvert (Downstream)	4,986	152.13	152.12	+0.01

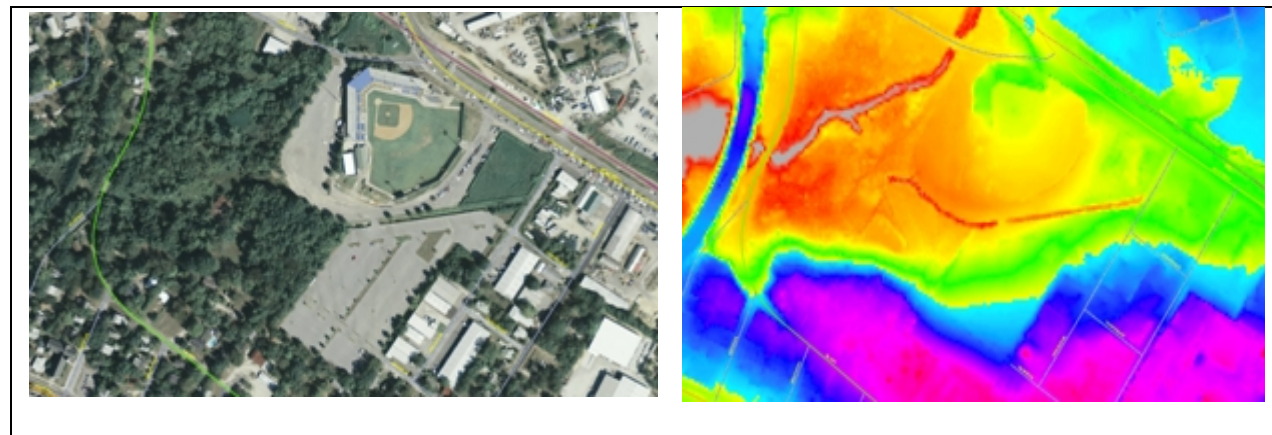
This existing model (version 4.1) is considered the Corrected Effective Model, since it reflects the updated flow conditions and/or undocumented, man-made changes that have occurred within the floodplain since the effective study was adopted. The model is also considered to be the Pre-Project Conditions and was used to analyze the impact of the proposed site on the floodplain. The BFE downstream of Assembly Street is approximately 175.3 feet (NAVD88), which is approximately 1.3 feet higher than the BFE in the duplicate effective model.

Post-Project Model:

The Pre-Project Condition Model was revised to reflect Post-Project Conditions (Proposed Model). The proposed model incorporates physical changes to the floodplain and terrain as a result of constructing the project. The proposed project would include a grading change that will place fill in the floodplain area, above the current floodplain elevation.

AMEC obtained recent LiDAR data and high resolution Digital Elevation Model (DEM) covering the entire Rocky Branch Watershed from the USGS.

Figure 2: Location of the proposed site with the ground DEM



This ground DEM was modified to show the proposed grading and wall with a top elevation of 185 feet. The pre-project condition model was based on surveyed structures and channel data. The left overbank of cross section 5721, located at 416 feet downstream of Dreyfuss Street, is affected by the proposed development and hence changing its overbank geometry generated the post-project model (See Attachment E). Table 5 below compares base flood elevations (BFE) for the pre-project model and post-project model. The base flood (100-year) is the only profile that was used for mapping the floodplain.

After analyzing the results of pre-project versus post-project conditions, it was shown that the BFEs are not changed, when rounded to tenths of a foot, and very insignificant changes were

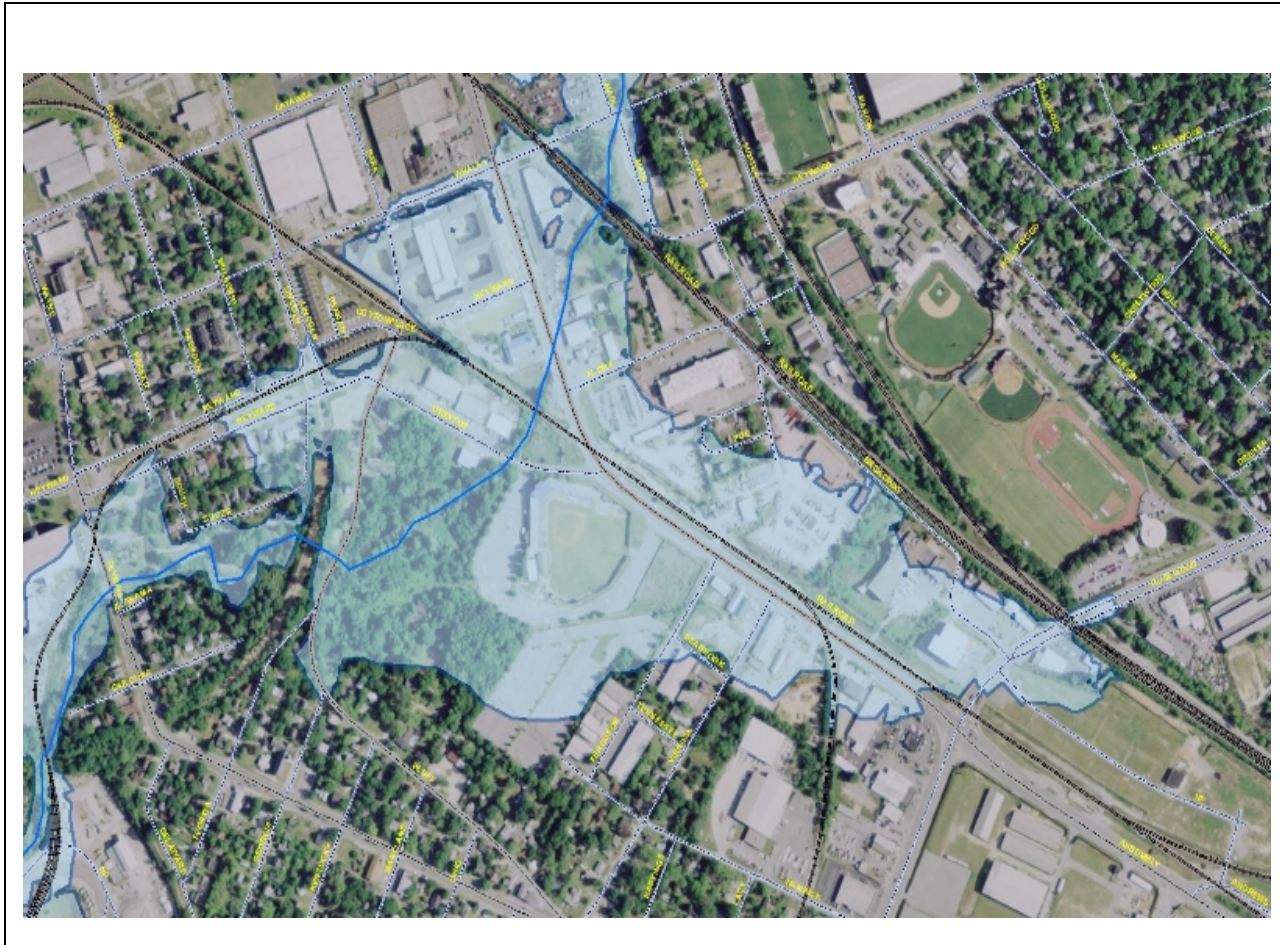
seen when rounded to hundredths of a foot. FEMA FIS Reports show only water surface elevations rounded to a tenth of a foot to display models' results. The results show that developing the site with this proposed plan is not expected to have an adverse effect on the BFE and SFHA.

Table 5: Computed Base Flood Elevations, before and after the proposed project

Physical Location	HEC-RAS Stations	Base Flood Elevation (BFE)	
		Pre-Project Model	Post-Project Model
Southern Railroad Bridge (Upstream)	6,376	175.4	175.4
Southern Railroad Bridge (Downstream)	6,354	175.26	175.27
	6,250	175.31	175.32
Dreyfuss Street (Upstream)	6,162	175.31	175.32
Dreyfuss Street (Downstream)	6,112	175.3	175.3
	5,721	175.3	175.3
Bluff Road (Upstream)	5,231	175.3	175.3
Bluff Road (Downstream)	5,181	175.29	175.29
Southern Railroad Culvert (Upstream)	5,166	174.63	174.63
Southern Railroad Culvert (Downstream)	4,986	152.12	152.12

The entire proposed project is located in the backwater (ineffective flow areas) outside the effective conveyance portion of the stream. Fill in such a backwater area is not expected to impact the BFE.

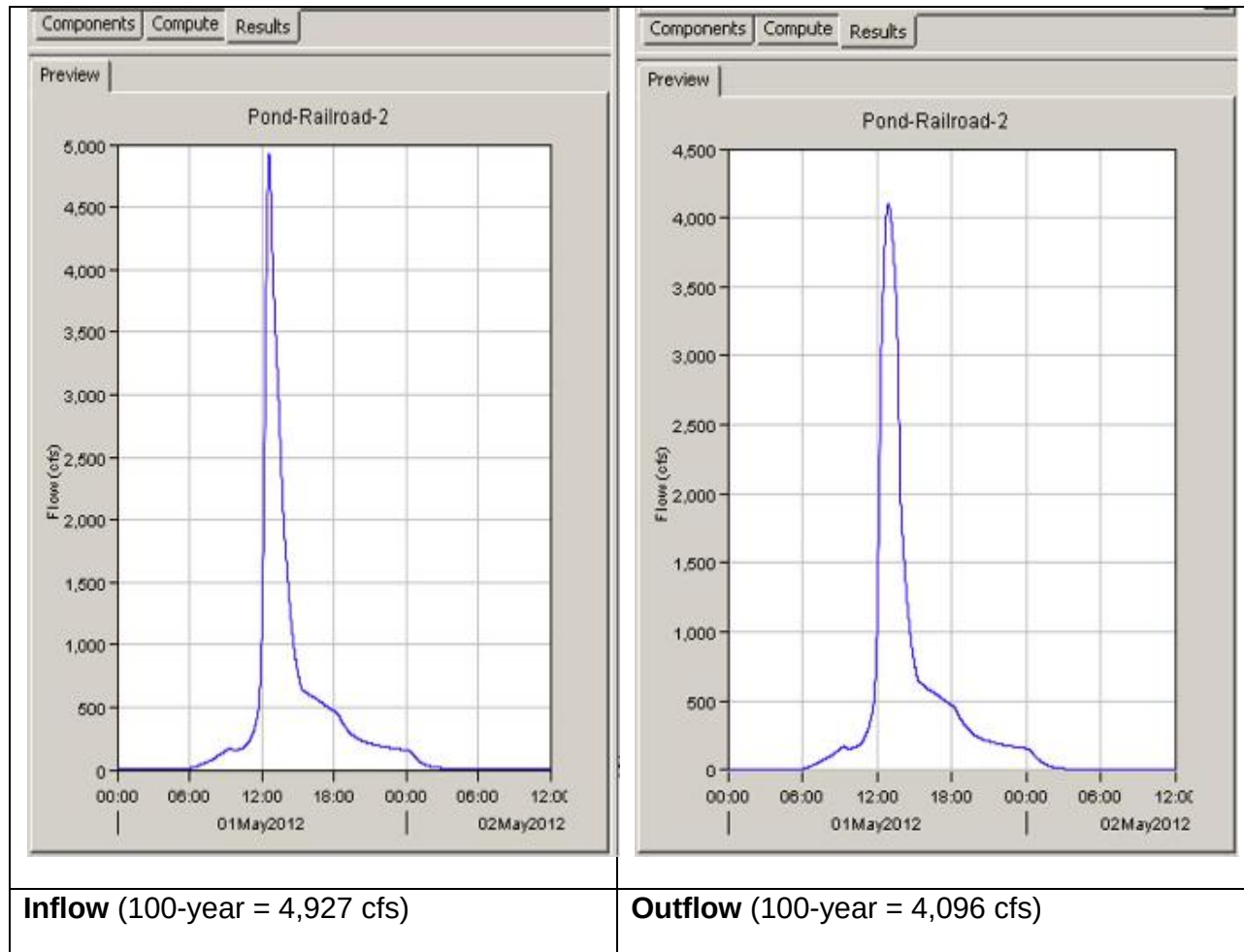
Figure 3: Existing Floodplain (SFHA)



Upon inspecting the base profile (100-year) in the existing HEC-RAS model (or even the profile Panels 119-120P), it can be seen that the BFE is being controlled by the high embankment areas at the railroad culvert just downstream of Bluff Road. This embankment is affecting flooding conditions upstream and at the location of the proposed site development, and behaves

as an in-line pond with the ability to lower (attenuate) the exiting flows. Figure 4 shows the hydrologic hydrographs upstream and downstream of this confining railroad culvert. Those hydrographs show the relationship of stream flow to the start of storm runoff.

Figure 4: Hydrographs of the Base Flood at Southern Railroad Culvert



Therefore, it will be important to use these attenuated flows for cross-sections downstream of the Bluff Road railway embankment to get a proper assessment of the impacts from proposed alterations to that crossing. The following section (Results) will focus on and provide the details

regarding alternative design analyses which include reducing flood stages for the Assembly Street site, hydrologic impacts to downstream areas, and the potential mitigating measures that could be taken.

2. Results and Conclusions

The results of AMEC's analyses are provided below, in the form of responses to the primary questions asked by the City. Tables and figures have been provided to show and compare the critical information from the modeling analyses. The full modeling results can be found in the Appendix.

How did the AMEC analyses compare with past studies?

AMEC was able to leverage the work performed in previous studies by PACE Engineering (2011) and PB Americas, Inc. (2007), which was collected by AMEC in the initial data collection steps of the project. AMEC's review of that available modeling information resulted in the following conclusions:

- PACE Engineering used the effective FEMA model, which was in the HEC-2 format and used the original Flood Insurance Study flows which did not reflect recent increases in urbanization. This was a reasonable first step to take by PACE Engineering, considering that this was an early assessment of floodplain behavior.
- PB Americas Inc. developed a new hydraulic model that was updated to reflect more recent watershed conditions (2006) including updated flows, which were developed with a widely accepted hydrologic model called HEC-HMS. The new hydraulic model (HEC-RAS), with its updated and higher flows, predicted flood stages that were higher than those predicted in the PACE Engineering model.
- A detailed review of the PB Americas Inc. HEC-RAS model determined that those cross-sections needed to be extended laterally to properly model flows for the highest flood stages. Therefore, AMEC used existing topographical data to extend the HEC-RAS

model cross-sections. This resulted in the prediction of similar stages as compared to the PB Americas model, but the AMEC hydraulic model shows wider and more accurate floodplain widths (See Map 1). The AMEC HEC-RAS model floodplain limits were similar than those in the effective FIRM, as can be seen in Map 2.

- The PB Study did model crossings causing large backwater conditions, such as the Bluff Road railway embankment, as dams and lakes in the HEC-HMS model. Doing so incorporates the effects of in-stream storage which can result in lower (attenuated) flows to downstream areas. The PB Study did not include attenuated flows in the HEC-RAS model, and instead chose to use conservatively higher unattenuated flows for the reach downstream of the Bluff Road railway embankment. That decision is common practice for studies that are focused on the hydraulic performance of a stream. However, AMEC did use hydrologic routing through these pond areas, which is discussed later in this section.
- Questions about the potential adverse downstream and upstream effects of the proposed fill to the project site, as well as the potential benefits of various stream crossing modifications, will be addressed later in this report.

In summary, AMEC found the previous studies by PACE Engineering and PB Americas, Inc. to be reasonable for their purposes, but the following changes were required by AMEC to address the goals of this project:

- Use the HEC-RAS model geometry from the PB Study, with extended cross-sections added by AMEC
- Use the updated flows from the HEC-HMS model developed in the PB Study, but change the flows downstream of the Bluff Road railway embankment to reflect the attenuated flows from the in-stream storage.

Would the proposed fill from the site cause a rise to the floodplain due to loss of conveyance?

AMEC used the available site design concept plan to modify the AMEC baseline HEC-RAS model. As can be seen in Map 3, the site limits lie in the backwater area, created by the severely undersized culvert through the railway embankment downstream of Bluff Road. This backwater area has a lesser conveyance capacity and is sometimes referred to as a “dead-water area”. Therefore, when modeled, the stream’s conveyance capacity was not shown to be affected by the proposed fill in this portion of the floodplain. It was determined that the proposed site development concept could likely be implemented without a rise in upstream water surfaces. Figure 1 provides a comparison of the flood stages at the site, which also depicts the proposed fill that was simulated in AMEC’s HEC-RAS model.

It should be noted that AMEC’s interpretation of the limits of fill may be different from a final design, and these rise calculations should be revised upon completion of final design. However, any such rises, if they occur, could likely be mitigated with downstream capacity increases, which are discussed later in this section. It should also be pointed out that the risk of negative impacts from the proposed site fill (i.e. storage volume that would be lost) was also considered. This issue is addressed later in this section also.

Would the fill reduce the storage volume of the floodplain and cause adverse impacts?

To address this question, AMEC validated the PB Study HEC-HMS model, which included a storage node for the Bluff Road railway embankment. That model resulted in reduced outflows from the railway culvert to the lower reach of Rocky Branch Creek (Olympia Avenue to the Congaree River). AMEC computed an independent in-stream storage estimate using available topographic data in the form of a Digital Elevation Model (DEM). As a result, AMEC’s estimates of the available in-stream storage behind the Bluff Road railway embankment were higher than those used in the PB Study model. The increase in available storage is considered to be the result of a more accurate DEM than what was available to PB Americas, Inc. Additionally, AMEC calculated the estimated proposed fill volume based on the conceptual site design. A comparison of those storage volumes is provided in Table 6.

Table 6 – Comparison of Floodplain Storage (for Elev 170)

Source	Storage (ac-ft)
PB Americas, Inc.	179.2
AMEC	328.7
Added Site Fill	241.0

When the HEC-HMS model was modified to include the greater in-stream storage capacity found to exist behind the Bluff Road railway embankment, the peak flows predicted to be exiting the Bluff Road railway culvert did not significantly differ from what was predicted in 2006 by PB Americas Inc. The peaks flows that were used in the hydraulic models by AMEC for the railway embankment ponding (inflows) and areas immediately downstream (outflows) are provided in Table 7. The results in Table 7 indicate that there is a potential for lower flood stages, as compare to the PB Study, downstream of the Bluff Road railway embankment for flood events greater than the 10-year event. This could lead to impacts from proposed downstream improvements (i.e. the Bluff Road RR upgrade/removal), intended to reduce upstream flooding. This topic will be discussed later in this section.

AMEC also computed the potential loss of in-stream storage capacity in the ponding near the development site due to the proposed fill (see Table 6). That reduction in volume had no impacts on the outflow from the Bluff Road railway culvert. Therefore, AMEC determined that the proposed fill on the development site would not be expected to have an impact on downstream flows due to that change to the hydrologic routing of the stream.

Table 7 – Bluff Road Railway Culvert Flows

Storm Event	2-year	5-year	10-year	25-year	50-year	100-year
Inflow (cfs)	1,700	2,417	2,972	3,692	4,305	4,927
Outflow (cfs)	1,697	2,396	2,846	3,357	3,732	4,096
Change (cfs)	-3.8	-20.8	-126	-335.6	-572.7	-831.8
% Change	-0.2%	-0.9%	-4.2%	-9.1%	-13.3%	-16.9%

Can improving the downstream crossings move flooding downstream?

As noted earlier in this section, there is the potential to move flooding (adjacent to the site) to a downstream location by increasing the capacity of downstream stream crossings. Specifically, there was concern that the attenuated culvert outflow rates from the Bluff Road railway culvert could be increased if that crossing was hydraulically improved. Therefore, AMEC further modified the baseline HEC-RAS model to assign the attenuated flows in Table 7 to the stream reach downstream of the Bluff Road railway. The results of that modeling can be seen in Profiles 2 through 4, which compare the flood stages with and without the Bluff Road railway embankment. If the Bluff Road railway embankment were to be removed it would reduce upstream stages, and increase downstream flows and stages, due to the absence of the backwater effect from the currently under-sized culvert. The peak flood stage increases downstream of Olympia Avenue are approximately as follows:

- 100-yr: 1.5 ft
- 50-yr: 1 ft
- 10 to 25-yr: <0.5 ft

- 1 to 5-yr: no rise

Potential mitigation measures to prevent this impact from occurring are discussed in the later in this section.

Can improving the downstream crossings improve the flooding conditions?

As shown in Profiles 2-4, improving the hydraulic capacity of the Bluff road railway embankment can dramatically reduce the backwater effect and flood stages in the Assembly Street area. It should also be noted that the results shown in Figures 2-4 reflect the greatest benefits that could be achieved, without regard to cost or convenience. This supports the trend identified by PACE Engineering, which included more detailed design alternatives. Complete removal of the Bluff Road railway embankment would provide the maximum upstream benefit (i.e. flood stage reduction) but would generate the maximum downstream impacts (i.e. flood stage increases).

As noted previously, improvements in the hydraulic conveyance of flood flows through the Bluff Road railway embankment will increase downstream flows and stages. To better understand the potential mitigation of these downstream impacts, AMEC simulated improved hydraulic conveyance at Olympia Avenue by removing that embankment from the model. The results can be viewed in Profiles 5-10. The following can be concluded from those results:

- The flood stage reduction benefits to the reach upstream of the Bluff Road railway culvert, as a result of removing/upgrading the Bluff Road railway and Olympia Avenue crossings, diminish depending on the flood event:
 - o Benefits for the 100-year event stop at the Southern Railway crossing
 - o Benefits for the 50-year event stop at Assembly Street
 - o Benefits for the 2- through 10-years event stop at Dreyfuss Avenue
- Improving the Olympia Avenue crossing would mitigate potential rises between Olympia and Bluff Road – potentially below current flood stages.

- o Removing or modifying the abandoned railway and quarry access road crossings further downstream of Olympia Avenue could also mitigate those rises
- Downstream of Olympia Avenue, the 100-yr floodplain could be approximately 50-60 feet wider than currently predicted, if the crossings are improved or removed. However, that appears to be related to (at least in part) the backwater from the quarry access bridge, which could be upgraded if that increase in floodplain width causes problems for adjacent property owners.
 - o That access crossing is already overtopped by the 10-yr, flood event so it may not be an issue.
- Further downstream of Olympia Avenue, the flood stages are contained within the channel. Therefore, those stage increases would potentially be tolerable.

Can water quality be addressed?

Water quality could be improved if the Bluff Road railway culvert capacity was improved. As seen in Table 8, the current exit velocities are extremely high for the Bluff Road railway culvert which contributes to:

- Streambed scouring;
- Loss of vegetation and trees;
- Streambank destruction;
- Sediment deposition in the lower reaches of Rocky Branch; and
- Sediment deposition at the confluence of the Congaree River.

Reducing scour and in-stream velocities would also help to sustain potential stream restoration efforts in the Olympia Avenue area.

Table 8 – Existing Culvert Exit Velocities (fps)

Storm Event	2-year	5-year	10-year	25-year	50-year	100-year
Bluff Rd. RR	10.7	14.4	17.2	20.7	23.7	26.7
Olympia Ave.	14.4	12.1	10.9	9.9	9.4	8.1

However, AMEC sees no significant water quality benefits from the existing floodplain storage upstream of the Bluff Road railway embankment. As shown in Table 7, the storage volume and detention time for events that occur more frequently than the 2-year flood event are negligible. The 2-year flood event is larger than the events that are generally of concern when addressing water quality issues. In other words, there is not any significant ponding occurring for the more frequent flow events (i.e. <1yr event), and benefits from the trapping of in-stream pollutants would be minimal, if not negligible.

What impacts does flooding on the Congaree River have on the area?

The limits of flooding due to the backwater from the Congaree River are shown in red on Profiles 5, 6 and 8 – based on information from the FIS. The 100-year event does extend up toward Olympia Avenue, and therefore could supersede the aforementioned rises downstream of Olympia Avenue. The 50-year event does extend up toward the quarry access road, and could supersede the aforementioned rises at that location. More frequent events in the Congaree River are expected to be below the stages in Rocky Branch Creek.

How much of the watershed can be served by improvements near the site?

No significant benefits, in the form of reduced flood stages, are expected to extend upstream of the Assembly Street area. However, downstream water quality can be significantly improved if

the exit velocities from the Bluff road railway and Olympia Avenue culverts can be decreased through increases in hydraulic capacity.

3. Recommendations

Based on the results in the preceding section, AMEC offers the following conclusions and recommendations:

- Developing the Assembly Street site may require some floodplain management measures to mitigate impacts to both upstream and downstream locations:
 - o The AMEC analyses did not indicate that an increase in the 100-year flood stage would occur due to the proposed site fill. However, another detailed analysis should be performed when a final detailed site plan is provided to affirm that conclusion.
 - o If a rise is projected to occur due to the proposed site fill, it should be mitigated. This can be done with an increase in the hydraulic capacity of the Bluff Road and railway culverts.
 - o Increasing the hydraulic capacity through the Bluff Road railway embankment will lead to increased flows (10-year and greater) and flood stages in the downstream areas. However potential remedies have been identified.
- The suggested remedy (by PACE Engineering) of increasing the capacity of downstream crossings (Olympia Avenue) to mitigate a rise they expected due to site fill, offers the following advantages and potential impacts:
 - o A potentially significant reduction in upstream flood stages, which would likely stop at the Assembly Street crossing. The actual magnitude and extent of the reduced flood stages would depend on the actual improvement made (moderate increase, complete removal, etc.)

- o An increased level of protection and service for Bluff Road and Olympia Avenue, which are projected to be overtopped by frequent events.
- o Reduced exit velocities from the Bluff Road railway culvert, which are considered to be a major contributor to the in-stream degradation seen along Rocky Branch (i.e. Olympia Park area, confluence with the Congaree River).
- o Increased flow rates from the Bluff Road railway culvert to the downstream culverts. These increased flows will lead to increased flood stages at and downstream of Olympia Avenue.
 - For Olympia Avenue, an increase in the hydraulic capacity of the culvert would be needed to prevent increased overtopping.
 - The flood stage increases to the areas downstream of Olympia Avenue are not expected to expand the floodplain width significantly. In many locations, the flows are still contained within the streambanks. However, the limits of this study prevent AMEC from assessing potential structures at risk for such stage increases. If those rises are found to lead to damages, they can be mitigated by increasing the hydraulic capacity of other downstream crossings (abandoned railway crossing & quarry access road).
- The improvements to the Bluff Road railway embankment and Olympia Avenue may offer an opportunity for watershed restoration.
 - o Because the railway embankment just downstream of Bluff Road is not in service, it may be feasible to provide a pedestrian walk way (tunnel or open cut) that could be the key node in developing a pedestrian walkway from the USC housing areas by Olympia Street to the Assembly Street site.
 - o In addition to providing the connectivity between the areas downstream of Olympia Avenue and Assembly Street, this initial segment can provide support

for more greenway segments, as well as for restoring the health of the Rocky Branch watershed through public awareness.

- o This awareness could also support in-stream restoration of that stream segment, which would be more sustainable with the reduced exit velocities from the Bluff Road railway and Olympia Avenue culverts (if improved).
- Although the actions previously noted cannot provide direct improvements to the upstream portions of the watershed, such as Five Points, AMEC suggests that the following steps be considered:
 - o Instead of more costly and disruptive full culvert replacements, we suggest looking at culvert inlet modifications. In many cases, the meandering alignment of the stream may not provide for efficient inlet flow, and the available capacity of the existing culverts may not be fully utilized. Inlet modifications (e.g. wing walls) are cheaper than full culvert upgrades and have the ability to improve hydraulics by up to 30%.
 - o In other upstream areas, such as the paved ditch and parking area in the Sumter Street area, underground storage could be added that could be designed to draw flow off line and fill as flood stages begin to crest. This is known as “peak shaving”, and can be used not only to reduce flooding for frequent events, but could also serve water quality goals. Such a design could reduce the duration of bank-full flood stages which are the greatest contributor for in-stream erosion and bank destabilization.
 - o For these suggested upstream improvements, AMEC recommends that a dynamic model, such as the SWMM model previously developed, be employed. Dynamic models, while more being complex and require a higher level of expertise, link the hydraulic, hydrologic and in-stream routing aspects. Dynamic models offer the ability to perform continuous simulations and provide a more comprehensive assessment. That would better ensure that a particular solution

would not lead to an unintended impact upstream or downstream (changes in flows or stages).

- o If dynamic modeling is used, the available USGS gage data should be leveraged to attempt to tailor the rainfall patterns and their return frequencies to this small watershed. The typical 24-hr events, using the SCS methodology, were appropriate for the purposes of this study. However, if a greater investment is made to pursue the recommendations in this report, calibration would help to receive a higher return on that investment.
- There are additional Green Infrastructure techniques that could be used in the upper watershed areas, and are recommended for potential use during the development of the Assembly Street site that reduce runoff:
 - o One or more of the following should be considered and used when possible; “Green Roofs”; pervious pavement; and bioretention features. These features can capture and reduce runoff from the initial portion of a rainfall event, and also reduce the effective imperviousness of a given site such as the proposed Assembly Street development site. These practices have been shown to effectively improve site runoff water quality.
 - o Cisterns that use water for other purposes may be viable options. They can come in the simplest form of a planter box that draws runoff for plantings and trees, which evapotranspirates the runoff with reduced irrigation costs. Or they can come in the form of “Blue Roofs” which are storage containers that use rainfall for purposes such as cooling water or vehicle washing.
 - o Promoting more non-concentrated flow through sheet flow (e.g. downspout disconnection) and using open swales may have limited applications in an urbanized basin, but should be assessed for their suitability including the proposed Assembly Street development. While each such installation may not be able to serve a large area, the opportunities throughout the watershed will

multiply such that their cumulative effect could provide water quality improvements to the smaller tributaries to Rocky Branch Creek.

- Finally, based on AMEC's observation at recent Rocky Branch Watershed Alliance Technical Committee meetings, many of the aforementioned issues and recommendations could benefit from their (and other stakeholder) cooperation:
 - o Integrating public outreach into features such as a greenway, to draw interest in and support for improvements to the upper reaches of the watershed.
 - o Identifying opportunities for stream restoration or flow reduction in the Five Points and USC areas.
 - o Identifying and applying added resources (previous Master Plans, time from professors and students).
 - o Cooperating with USGS to gather more-detailed rainfall and stream stage/flow information from the available gages, or possibly to add more gages in strategic locations.
 - o Finding potential locations for runoff diversion and capture locations, as well as those locations that are suitable for Green Infrastructure techniques.



We Are Columbia

MEETING DATE: June 11, 2019

DEPARTMENT: City Clerk

FROM: *Erika Moore, City Clerk*

SUBJECT: The COMET's Fiscal Year 2019/2020 Budget Presentation -
Mr. John C. Andoh, Executive Director/CEO for The COMET

**FUNDING SOURCE &
ORIGINAL BUDGET:**

ATTACHMENTS:

- **#a:** Central Midlands Regional Transit Authority Budget 2020! (PDF)

HISTORY:

05/21/19

Columbia City Council

RECEIVED AS INFORMATION. NO ACTION WAS TAKEN.



Central Midlands Regional Transit Authority



Fiscal Year 2019-2020 Budget



April 30, 2019

Dear Honorable Members of the Board of Directors,

This budget document is my first since becoming Executive Director/CEO/CEO of the Central Midlands Regional Transit Authority (The COMET). The previous fiscal year had its successes and challenges as The COMET continues to manage its public transit system throughout Richland and Lexington Counties. From the past year, there was continued increase ridership growth, addition of new advisory members from the Cities of West Columbia and Cayce, Towns of Springdale and Eastover and new partnerships were formed with Richland One, Nephron Pharmaceuticals, Riverbanks Zoo & Garden, Midlands Technical College, City Center Partnership, Experience SC, Foodshare, Richland Library, Central Midlands Council of Governments and various associations and chambers of commerce's to support and increase awareness of The COMET services. The COMET also implemented new mobility management strategies such as partnerships with Lyft and Uber, Commute with Enterprise and Blue Bike. The COMET is more than just fixed route buses and ADA paratransit services.

South Carolina Code of Law Chapter 25, Section 58-25-70 requires The COMET, as a regional transportation authority, to submit to the member municipalities and counties the annual operating and capital budget proposed for each fiscal year, at least sixty days (60) prior to the beginning of the fiscal year. This proposed operating and capital budget document is to achieve the intent of this section. It is my pleasure to present the Fiscal Year 2019-2020 budget for Central Midlands Regional Transit Authority.

This budget continues the endeavor to maintain our current operations. Any expansion would be borne by pursuit of new grants or funding sources as well as continued service planning to improve the efficiency of the transit system. In order to provide a total picture of The COMET, this budget document encompasses all of the activities under the jurisdiction of The COMET Board of Directors. The budget assumes that approximately 185,000 revenue hours for fixed route, 16,000 revenue hours for flex routes and 39,000 revenue hours for DART paratransit services will be provided in fiscal year 2019-2020. Transdev's rate will increase by CPI Index of 1.5% with a \$1.54 adder, per fixed route hour operated. Their contract expires at the end of June 30, 2020 with an option to extend up to five (5) one-year extensions through June 30, 2025.

Service enhancements are funded by Federal Transit Administration (FTA) funding in the amount of \$1,500,000 to cover Transdev's operational costs. This will allow for the addition of a new route along Trenholm Road, a rural route to Batesburg/Leesville and an express route to Lower Richland area. It is projected that two additional regular fixed routes may be converted to ReFlex routes and subcontracted to the DART operator this fiscal year to reduce costs based on the productivity of those routes. In addition, \$455,572 of FTA funding will cover DART ADA paratransit expenses. This offset allows for additional services to be provided in both Richland and Lexington Counties, and the building of a reserve of the Richland County Transportation Penny. Beyond the service levels of fiscal year 2019-2020, there are no additional funds to expand service unless another source of operational funds are provided to The COMET or lower productive routes are discontinued.

The budget is based on known revenue amounts that have been committed. Revenue amounts are always subject to change and staff will keep the Board of Directors apprised on any changes based on decisions made by local, state and Federal agencies. Known revenue amounts include FTA, member agency contributions from the municipalities, miscellaneous revenues, farebox revenues and pass revenues based on memorandum of understandings exercised with various social service agencies.

There will be a slight increase in local match revenues due to a 1.5% increase in the Transdev contract. This increase will be passed to member jurisdictions in Lexington County as well as any contractual service provided. Staffing will be reduced from 13 employees to 11 employees, plus one employee contracted to a social service agency and will be funded through FTA Section 5310 funding. This is from a reorganization last fiscal year to ensure all areas of the administering agency, such as The COMET is covered. Many duplicative functions provided by The COMET and its contractors or consultants have been eliminated. Professional services will slightly decline due to many contracts being re-procured in the prior fiscal year with defined pricing.

All these efforts are contained within a budget that maintains a stable financial footing for this fiscal year. Given our heavy reliance upon member agency contributions, this budget assumes limited growth in member agency contributions by CPI and continues to seek additional funding from external partners, other educational institutions and employers.

As The COMET moves into the future, this budget will take into consideration the overall review of how The COMET does business. While there is ample funding for today's operations, the largest funding source, the Richland County Transportation Penny is capped at \$300,991,000 or 22 years (2035). The COMET projects that the funding cap will be reached in the start of fiscal year 2028-2029 with reserves to last through the end of that fiscal year. The COMET will spend the next upcoming fiscal year to engage the community and build support for the transit system. This will involve increased marketing and community awareness, study of The COMET's business practices and routes through a comprehensive operational analysis, development of mobility management strategies, adding passenger amenities and discussions on addressing future funding and governance of the regional transportation authority. There will be a renewed effort to make the transit system fast, fun, friendly and frequent by redirecting existing resources.

While there are unmet transit needs in Richland and Lexington Counties, The COMET does not have the resources to implement these needs at this time and it is very prudent that the resources available are utilized in the appropriate manner consistent with the Vision 2020 and Compass Strategic Plan to ensure that the promise has been delivered to Richland County taxpayers. This will ensure creditability should The COMET be successful in requesting Richland County to consider a seven-year extension of the Penny Program.

For a second year in a row, The COMET's financial successes and complex grant management successes goes to Rosalyn Andrews, The COMET's Director of Finance/CFO and Michelle Ransom, the Grants & Regional Coordination Manager in being able to manage The COMET's finances in a manner to allow for our continued fiscal sustainability and to The COMET's Finance Committee, including its previous Chair, Andy Smith, current Chair, Dr. Robert Morris and its members, Joyce Dickerson, Jacqueline Boulware, Leon Howard and Col. (R) Roger Leaks, Jr. in ensuring the limited funds needed to operate The COMET is managed in the most prudent possible way.

Being 18 years old as a government agency and The COMET transit system being around for 127 years through its predecessors together, we will continue to experience a much smoother road and clearer skies in fiscal year 2019-2020 as we continue to encourage Central Midlands residents and visitors to Catch The COMET!

Should you have any questions regarding this budget report, please contact me at (803) 255-7087 or email me at john.andoh@TheCometSC.gov or Rosalyn Andrews, Director of Finance/CFO at (803) 255-7135 or email rosalyn.andrews@TheCometSC.gov.

Sincerely,



John C. Andoh, CCTM
Executive Director/CEO/CEO

DRAFT

Central Midlands Regional Transit Authority
3613 Lucius Road, Columbia, SC 29201
P 803 255 7133 F 803 255 7113
CATCHTHECOMETSC.GOV
info@TheCOMETSC.gov

John Andoh, CCTM, CPM Executive Director/CEO
Ron Anderson, Chair, John V. Furgess, Sr., Vice Chair
Andy Smith, Secretary, Dr. Robert Morris, Treasurer
Board Members: Jacqueline Boulware, Lill Mood,
Carolyn Gleaton, Leon Howard, Derrick Huggins,
Col. (R) Roger Leaks, Jr., Joyce Dickerson, Skip Jenkins,
Debbie Summers, Bobby Horton, Kevin Reeley, Geraldine
Robinson, William (B.J.) Unthank



Introduction

Per the South Carolina Code of Laws – Chapter 25 – Regional Transportation Authority Law, Central Midlands Regional Transit Authority is required to present and seek concurrence of annual budget by the member governments, at least 60 days prior to the beginning of the fiscal year.

SECTION 58-25-70. Recordkeeping and reporting; proposal and approval of budgets.

The authority must keep books of account, which must be independently audited at least once in each calendar year. A copy of the audit report must be provided to the member municipalities and counties. The authority must make an annual report of its activities to the member municipalities and counties. The authority must submit to the member municipalities and counties the annual operating and capital budget proposed for each fiscal year, at least sixty days prior to the beginning of the fiscal year. In the event a member municipality or county disagrees with the proposed budget, it may set forth points of disagreement and transmit its statement to the authority and other governing bodies of the member municipalities and counties within thirty days of the receipt of the proposed budget. Budgets must be adopted by a majority of the member governments. In the event a majority of the governing bodies of the member municipalities and counties do not agree with the proposed budget, the authority must convene a meeting of chief elected and administrative officials of member governments to develop a budget which may be acceptable to a majority of the member governments; a majority, for the purposes of this section, includes the governing bodies of the member municipalities and counties representing more than one-half of the service area population. In the event a budget acceptable to a majority of the member governments is not developed prior to the beginning of its fiscal year, the authority shall continue to operate at the budget levels of the previously approved budget. Any budget changes requiring an increase in local funds in excess of ten percent during the budget year must be approved as provided above for annual budgets.

HISTORY: 1962 Code Section 59-127; 1973 (58) 726; 1985 Act No. 169, Section 2, eff July 1, 1985; 1997 Act No. 43, Section 6, eff May 21, 1997.

The following is an overview of the revenues and expenses for The COMET for its 2019-2020 fiscal year. The fiscal year encompasses the period from July 01, 2019 through June 30, 2020. Total budgeted operating & capital revenues increased by 13% and expenditures increased by 8% from the FY 2018-2019 adopted budget. Specific details regarding the increase in the operating budget are outlined later in this publication.



The Organization

The COMET is a regional transportation authority formed by Richland County, City of Columbia and Lexington County on April 24, 2000 by the Central Midlands Council of Governments. In May 2001, The COMET Board of Directors held its first meeting. On October 16, 2002, The COMET assumed operations of the bus services provided by South Carolina Electric and Gas Company whom was utilizing a private contractor.

The COMET consists of an intergovernmental agreement signed by Richland County, City of Columbia, City of Forest Acres and Lexington County to fund, operate and maintain public transit services in the Central Midlands area. The intergovernmental agreement took effect in July of 2013 based on receipt of new funding from Richland County for 22 years or \$300,991,000, whichever comes first.

The COMET Board of Directors sets overall policy and direction for the transit system. 11 voting Board Members representing the City of Columbia (3), Richland County (3), City of Forest Acres (1), Lexington County (3) and Richland County Delegation (1). Non-voting members include one (1) representative each from the City of Cayce, City of West Columbia, Town of Springdale, Town of Eastover, Lexington County Legislative Delegation and Lexington County. Board meetings are held the 4th Wednesday of each month. Committee meetings are held on the 2nd Wednesday of each month.

The COMET has 12 employees, overseen by an Executive Director/CEO with support from staff in the Finance, Regulatory Compliance & Civil Rights, Operations & Administration, Planning and Development departments.

Board Members

Ron Anderson - Chair
Robert Morris -Treasurer
Jacqueline Boulware
Carolyn Gleaton
Derrick Huggins
Lill Mood
Debbie Summers*
J. Kevin Reeley*
William (B.J.) Unthank*

John V. Furgess, Sr. – Vice Chair
Andy Smith - Secretary
Joyce Dickerson
Leon Howard
Col (R) Roger Leaks Jr.
Skip Jenkins*
Bobby Horton*
Geraldine Robinson*

(*Advisory members)

Senior Staff

John C. Andoh III - Executive Director/CEO
Rosalyn Andrews - Director of Finance/CFO
LeRoy DesChamps - Director of Administration & Operations/COO
Dr. Arlene Prince – Director of Regulatory Compliance & Civil Rights Officer
Donna “Michelle” Ransom - Grants & Regional Coordination Manager



Motto, Mission & Vision Statement

Motto

Catch The COMET.....We Will Get You There!

Mission Statement

The COMET provides safe, reliable, efficient, and customer-friendly mobility services throughout the Midlands region and stimulates economic development and enhances quality of life.

Vision Statement

A high-quality public transit service that contributes to economic development, environmental sustainability and mobility solutions throughout the Midlands.

Core Values

- ✓ Safety
- ✓ Reliability
- ✓ Friendliness
- ✓ Cleanliness
- ✓ Cost Effectiveness

Revenues & Expenditures Summary

The total proposed budget for Fiscal Year (FY) 2019-2020 is ~\$29.80 million, increasing \$3.42 million or 13% from \$26.38 million in FY 2018-2019. The table below provides the budgets major categories, percentage change from FY 2018-2019 to FY 2019-2020 and percent of revenue.

	FY2019 Approved Budget	Total Proposed Budget FY 2020	% Change	% of Revenue
Operating Revenue				
Passenger Fares Revenue	2,450,000	2,720,579	11.0%	9.13%
Advertising Revenue	7,200	40,000	455.6%	0.13%
In Kind Revenue: Transit Center	60,000	-	-100.0%	0.00%
Contractual Service Revenue	150,000	155,000	3.3%	0.52%
County of Lexington	211,658	238,771	12.8%	0.80%
Interest Income	30,000	40,000	33.3%	0.13%
Richland County Penny Tax	18,700,000	18,855,298	0.8%	63.27%
SCDOT: SMTF & OPT 5311	750,021	714,455	-4.7%	2.40%
Hospitality/Accommodations	-	6,000	#DIV/0!	0.02%
CDBG - Shelters & Pass Program	-	100,000	#DIV/0!	0.34%
FTA Federal Revenue	4,013,192	6,924,332	72.5%	23.24%
Miscellaneous Income	10,150	6,400	-36.9%	0.02%
Total Revenue	26,382,221	29,800,835	13%	100%

Funding for The COMET's operation and capital cost are generated from several funding sources. The COMET's main sources are: Passenger fares @ 9.13%, Federal Transit Administration (FTA) grants @ 23.24%, Richland County Penny tax revenue @ 63.27% and miscellaneous revenues (Lexington County, State, advertising, etc.) are 4.36% of the total proposed budgeted revenue anticipated to be received in FY 2019-2020.

The COMET's expected capital projects for FY 2019-2020 are:

- Two diesel powered trolleys
- Two low-floor gasoline powered cutaways
- Continued renovation of Laurel & Sumter Street Transit Center
- New Intelligent Transportation System (ITS)
- Bikeshare stations in Downtown Columbia, Cayce and West Columbia
- Passenger amenities, including bus shelters, benches and bike racks
- Website redesign
- Mobility management
- Training and development of staff
- Computer hardware and software

The COMET's expected operations projects for FY 2019-2020 are:

- Transit operations, marketing and administration in Richland and Lexington Counties
- Security on buses, transit center and bus stops
- Vanpool program
- Preventative maintenance of transit buses and facilities
- Lyft/Uber subsidy, Blue Bike, Volunteer transportation and subsidized taxi scrip program.

Revenues & Expenditures Summary (Continued)

Operating Revenue	FY2019 Approved Budget	Total Proposed Budget FY 2020	\$ Variance	% Change	Operating Budget	Capital Budget
Passenger Fares Revenue	\$ 2,450,000	\$ 2,720,579	\$ 270,579	11%	\$ 2,720,579	\$ -
Advertising Revenue	\$ 7,200	\$ 40,000	\$ 32,800	456%	\$ 40,000	\$ -
In Kind Revenue: Transit Center	\$ 60,000	\$ -	\$ (60,000)	-100%	\$ -	\$ -
Contractual Service Revenue	\$ 150,000	\$ 155,000	\$ 5,000	3%	\$ 155,000	\$ -
Local Revenue: County of Lexington	\$ 211,658	\$ 238,771	\$ 27,113	13%	\$ 238,771	\$ -
Interest Income	\$ 30,000	\$ 40,000	\$ 10,000	33%	\$ 40,000	\$ -
1% Sales Taxes Revenue Earned: Richland County	\$ 18,700,000	\$ 18,855,298	\$ 155,298	1%	\$ 12,786,835	\$ 6,068,463
SCDOT: State Mass Transit Funds	\$ 603,485	\$ 567,919	\$ (35,566)	-6%	\$ 567,919	\$ -
SCDOT: OPT Rural Program 5311 Revenue	\$ 146,536	\$ 146,536	\$ -	0%	\$ 146,536	\$ -
Rental Income	\$ 7,150	\$ 5,400	\$ (1,750)	-24%	\$ 5,400	\$ -
Hospitality/Accommodations	\$ -	\$ 6,000	\$ 6,000	#DIV/0!	\$ 6,000	\$ -
CDBG - Shelters	\$ -	\$ 81,000	\$ 81,000	#DIV/0!	\$ -	\$ 81,000
CDBG - Pass Program	\$ -	\$ 19,000	\$ 19,000	#DIV/0!	\$ 19,000	\$ -
Federal Revenue: Non PM	\$ 957,088	\$ 891,191	\$ (65,897)	-7%	\$ -	\$ 891,191
Federal Revenue: PM	\$ 1,460,000	\$ 800,000	\$ (660,000)	-45%	\$ -	\$ 800,000
Federal Revenue: Cap Ex	\$ -	\$ 727,200	\$ 727,200	#DIV/0!	\$ -	\$ 727,200
Federal Revenue: 5310 Salary Positions	\$ 12,320	\$ 57,200	\$ 44,880	364%	\$ -	\$ 57,200
Federal Revenue: ADP Software	\$ 50,000	\$ 80,000	\$ 30,000	60%	\$ -	\$ 80,000
Federal Revenue: ADP Hardware	\$ 62,500	\$ 80,000	\$ 17,500	28%	\$ -	\$ 80,000
Federal Revenue: Operations Assistance	\$ 1,000,000	\$ 1,500,000	\$ 500,000	50%	\$ 1,500,000	
Federal Revenue: ADA Paratransit	\$ 418,884	\$ 455,572	\$ 36,688	9%	\$ -	\$ 455,572
Federal Revenue: Training	\$ 52,400	\$ 41,600	\$ (10,800)	-21%	\$ -	\$ 41,600
Federal Revenue: 3rd Party Contractual (Website)	\$ -	\$ 16,000	\$ 16,000	#DIV/0!	\$ -	\$ 16,000
Federal Revenue: Automated Passenger Counters	\$ -	\$ 319,230	\$ 319,230	#DIV/0!	\$ -	\$ 319,230
Federal Revenue: Safety & Security	\$ -	\$ 130,557	\$ 130,557	#DIV/0!	\$ 130,557	\$ -
Federal Revenue: Vanpool Operations	\$ -	\$ 120,000	\$ 120,000	#DIV/0!	\$ 120,000	\$ -
Federal Revenue: Bike Program	\$ -	\$ 256,000	\$ 256,000	#DIV/0!	\$ -	\$ 256,000
Federal Revenue: 5339 Shelter Acquisition & Installation	\$ -	\$ 1,440,928	\$ 1,440,928	#DIV/0!	\$ -	\$ 1,440,928
Federal Revenue: 5310 Mobility Program	\$ -	\$ 8,854	\$ 8,854	#DIV/0!	\$ 8,854	\$ -
Miscellaneous Income	\$ 3,000	\$ 1,000	\$ (2,000)	-67%	\$ 1,000	\$ -
Total Revenue	\$ 26,382,221	\$ 29,800,835	\$ 3,418,614	13%	\$ 18,486,451	\$ 11,314,384

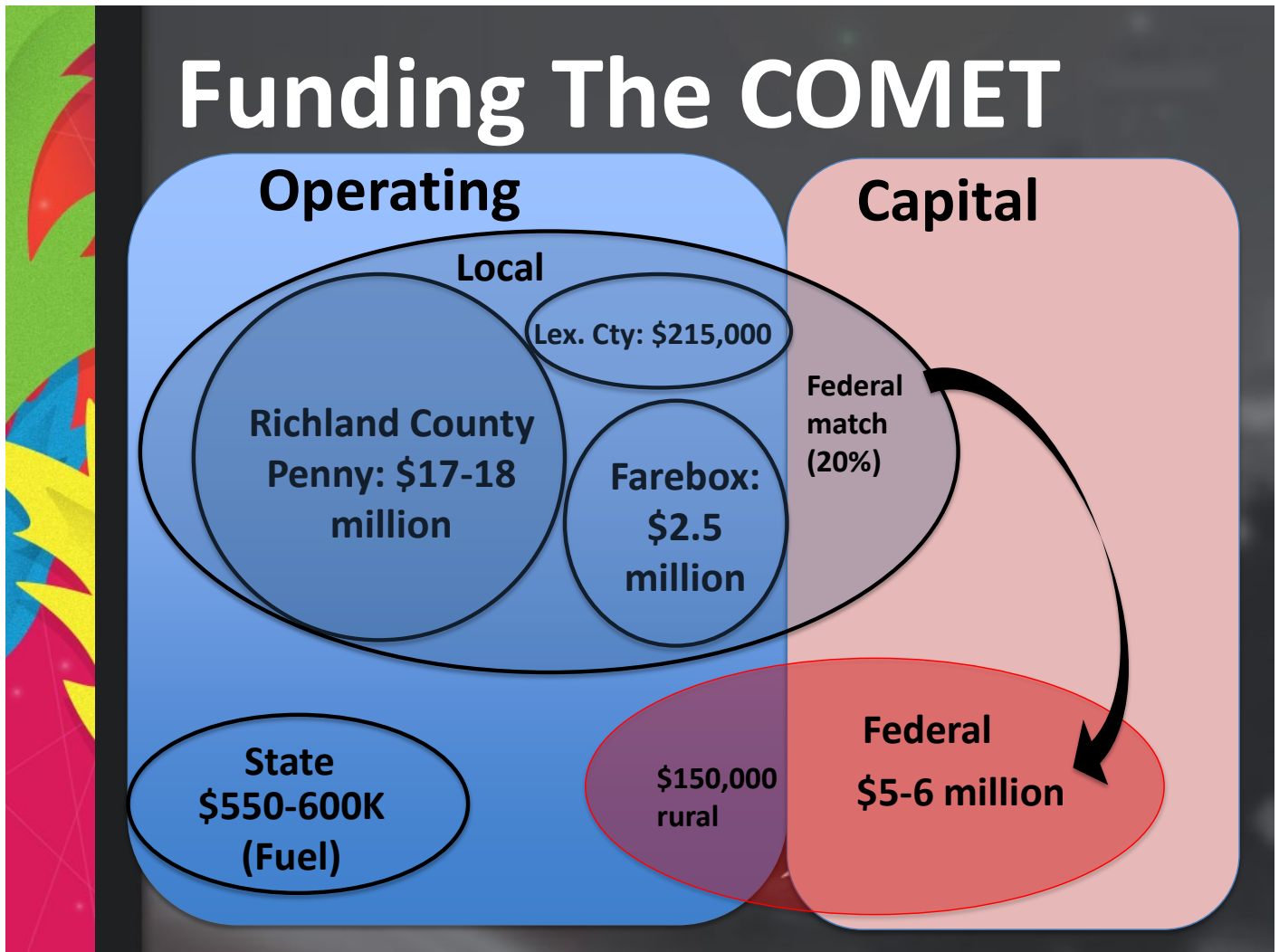
Revenues & Expenditures Summary (Continued)

Account Name	FY2019 Approved Budget	Total Proposed Budget FY 2020	\$ Variance	% Change	Operating Budget	Capital Budget
Operating Expenses						
Salaries	\$ 832,970	\$ 892,087	\$ 59,117	7%	\$ 892,087	\$ -
Fringe Benefits	\$ 280,000	\$ 277,882	\$ (2,118)	-1%	\$ 277,882	\$ -
Membership, Dues, Subscriptions	\$ 65,000	\$ 36,000	\$ (29,000)	-45%	\$ 36,000	\$ -
Tuition Reimbursement	\$ -	\$ 42,000	\$ 42,000	#DIV/0!	\$ 42,000	\$ -
Marketing/Advertising/Promotion	\$ 100,000	\$ 256,000	\$ 156,000	156%	\$ 256,000	\$ -
Office Expense	\$ 12,000	\$ 12,000	\$ -	0%	\$ 12,000	\$ -
Charitable Donations (Passes)	\$ -	\$ 7,200	\$ 7,200	#DIV/0!	\$ 7,200	\$ -
Postage & Shipping	\$ 4,200	\$ 5,500	\$ 1,300	31%	\$ 5,500	\$ -
Printing	\$ 100,000	\$ 85,000	\$ (15,000)	-15%	\$ 85,000	\$ -
Board Member Expenses	\$ 10,000	\$ 10,000	\$ -	0%	\$ 10,000	\$ -
Transit Academy	\$ 3,216	\$ 1,500	\$ (1,716)	-53%	\$ 1,500	\$ -
Contractor: Fixed Route	\$ 12,448,086	\$ 8,473,375	\$ (3,974,711)	-32%	\$ 8,473,375	\$ -
Contractor: DART	\$ 2,323,580	\$ 2,816,697	\$ 493,117	21%	\$ 2,816,697	\$ -
Reserved for Service Enhancements	\$ -	\$ 270,000	\$ 270,000	#DIV/0!	\$ 270,000	\$ -
5311: Rural Expenses	\$ 188,992	\$ -	\$ (188,992)	-100%		\$ -
Vehicle Fuel - Propane	\$ 840,000	\$ 900,000	\$ 60,000	7%	\$ 900,000	\$ -
Vehicle Fuel - Diesel/Unleaded	\$ 950,000	\$ 1,000,000	\$ 50,000	5%	\$ 1,000,000	\$ -
Insurance - Vehicle	\$ 76,000	\$ 95,000	\$ 19,000	25%	\$ 95,000	\$ -
Insurance - Property	\$ 15,400	\$ 17,710	\$ 2,310	15%	\$ 17,710	\$ -
Insurance - Tort Liability	\$ 18,800	\$ 23,500	\$ 4,700	25%	\$ 23,500	\$ -
Insurance - Officers & Directors	\$ 5,256	\$ 6,307	\$ 1,051	20%	\$ 6,307	\$ -
Professional Contracted Services	\$ 980,000	\$ 472,430	\$ (507,570)	-52%	\$ 472,430	\$ -
Fare Collection Services/Supplies	\$ 50,000	\$ 50,000	\$ -	0%	\$ 50,000	\$ -
Tickets & Transfers	\$ 30,000	\$ 30,000	\$ -	0%	\$ 30,000	\$ -
Natural Gas	\$ 8,000	\$ 9,600	\$ 1,600	20%	\$ 9,600	\$ -
Electricity	\$ 122,000	\$ 140,300	\$ 18,300	15%	\$ 140,300	\$ -
Water & Sewer	\$ 27,000	\$ 35,000	\$ 8,000	30%	\$ 35,000	\$ -
Telecommunications	\$ 100,000	\$ 84,100	\$ (15,900)	-16%	\$ 84,100	\$ -
Other Administrative Expenses	\$ 25,000	\$ 39,000	\$ 14,000	56%	\$ 39,000	\$ -
Banking Fees	\$ 20,000	\$ 25,000	\$ 5,000	25%	\$ 25,000	\$ -
Payroll Processing Fees	\$ 2,000	\$ 2,500	\$ 500	25%	\$ 2,500	\$ -
Leases/Rentals	\$ 15,000	\$ 38,000	\$ 23,000	153%	\$ 38,000	\$ -
Office Equipment & Furniture <\$5,000	\$ 7,500	\$ 6,000	\$ (1,500)	-20%	\$ 6,000	\$ -

Revenues & Expenditures Summary (Continued)

Account Name	FY2019 Approved Budget	Total Proposed Budget FY 2020	\$ Variance	% Change	Operating Budget	Capital Budget
Federal Expense: 5310	\$ -	\$ 86,762	\$ 86,762	#DIV/0!	\$ 86,762	
Federal Expense: 5339 Shelter Acquisition & Installation	\$ -	\$ 1,801,160	\$ 1,801,160	#DIV/0!	\$ -	\$ 1,801,160
Federal Expense: Transit Operations	\$ 1,000,000	\$ 3,000,000	\$ 2,000,000	200%	\$ -	\$ 3,000,000
Federal Expense: Preventative Maintenance (PM)	\$ 1,825,000	\$ 1,000,000	\$ (825,000)	-45%	\$ -	\$ 1,000,000
Federal Expense: Capital Expenses	\$ -	\$ 2,037,228	\$ 2,037,228	#DIV/0!	\$ -	\$ 2,037,228
Federal Expense: Capital-Non PM	\$ 1,196,360	\$ 623,377	\$ (572,983)	-48%	\$ -	\$ 623,377
Federal Expense: 3rd Party Contractual (Website)	\$ -	\$ 25,000	\$ 25,000	#DIV/0!	\$ -	\$ 25,000
Federal Expense: Automated Passenger Counter	\$ -	\$ 498,796	\$ 498,796	#DIV/0!	\$ -	\$ 498,796
Federal Expense: Safety & Security	\$ 509,358	\$ 559,358	\$ 50,000	10%	\$ -	\$ 559,358
Federal Expense: Software & Equipment Acquisition	\$ 100,000	\$ 100,000	\$ -	0%	\$ -	\$ 100,000
Federal Expense: Hardware Acquisition	\$ 125,000	\$ 100,000	\$ (25,000)	-20%	\$ -	\$ 100,000
Federal Expense: Vanpool Operations	\$ -	\$ 120,000	\$ 120,000	#DIV/0!	\$ -	\$ 120,000
Federal Expense: Bike Program	\$ -	\$ 250,000	\$ 250,000	#DIV/0!	\$ -	\$ 250,000
Federal Expense: ADA Paratransit	\$ 523,605	\$ 569,465	\$ 45,860	9%	\$ -	\$ 569,465
Federal Expense: Training & Development (Staff)	\$ 65,500	\$ 70,000	\$ 4,500	7%	\$ -	\$ 70,000
Facility Rental Expense Realized	\$ 60,000	\$ -	\$ (60,000)	-100%	\$ -	\$ -
Depreciation Expense	\$ 2,600,000	\$ 2,800,000	\$ 200,000	8%	\$ 2,240,000	\$ 560,000
Total Expenses	\$ 27,664,823	\$ 29,800,835	\$ 2,136,012	8%	\$ 18,486,451	\$ 11,314,384
Net Income (before reserve requirements)	\$ (1,282,602)	\$ (0)				
Less: Operating Reserve - LGIP		\$ 850,708				
Less: Emergency Reserve - LGIP		\$ 850,708				
Less: Capital Reserve - OPTUS Bank		\$ 138,000				
Total Reserve	\$ -	\$ 1,839,416				
Add: NonCash Depreciation Expense	\$ 2,600,000	\$ 2,800,000				
Net Cash	\$ 1,317,398	\$ 960,584				

The Funding Picture



The Budget Process

An operating budget is a formal, written plan that aligns the operating requirements with the funding sources of an organization. An operating budget reflects the missions and specific command objectives of the organization, as well as any limitations and controls (e.g., constraining targets, available funds) imposed upon it. An operating budget provides one the means to control obligations and expenditures against approved funding levels.

The objective of the operating budget is to provide managers with the ability to plan, organize, staff, and control the operations to accomplish the mission for the fiscal year.

The COMET adopts a flexible annual operating and capital budget. The operating budget is adopted on a basis, which approximates Generally Accepted Accounting Principles (GAAP).

This administrative procedure identifies the steps for creation, submission, approval and review of an annual budget. The fiscal year for The COMET shall be July 1st through June 30th in accordance with the by-laws.

In mid-March of each year, the Executive Director/CEO/CEO shall develop and submit a draft budget request to the Finance Committee for the next fiscal year based on the needs of The COMET. Such request shall include an itemized estimate of the anticipated revenues and expenditures for the next fiscal year. Methodologies and notes related to each line item accompany the budget request where appropriate and necessary. The proposed annual budget is structured based on historic and projected levels of available funding (revenues) and expenditures, with consideration given to the requirements of any of the organization's funding partners.

At the regularly scheduled April meeting of the Board of Directors, the COMET's Executive Director/CEO will submit a draft budget request to the Board of Directors to support the annual operations, administration and capital needs of The COMET for the ensuing fiscal year. Presentation of the proposed budget at the annual April meeting provides up to 60 days for Board review, revision, and approval, prior to the beginning of the new fiscal year and prior to submission to funding sources. All Board of Directors members will be given the opportunity to review the draft budget and present any questions or concerns for discussion.

No later than May 30th of each year The COMET's Executive Director/CEO shall prepare a proposed final and complete budget including all approved Board of Directors requested revisions. The methodologies and notes related to each line item accompany the budget request where appropriate and necessary. The budget plan shall include a narrative explaining any major changes from the current fiscal year revenue and expenditures.

The budget plan shall be adopted annually by the Finance Committee and Board of Directors no later than June 30th of each year. Should the Board of Directors not adopt a new budget prior to the start of a fiscal year, The COMET will operate under the funding levels and constraints of the previous fiscal year, until a new budget is adopted by the Board of Directors. This process would be like the "continuing resolution" process used at the Federal level.

Amendments: The Finance team will conduct reviews monthly to identify any variances and notify the Executive Director/CEO. The COMET adopts a flexible (within bottom line figure) annual operating, administrative and capital budget, which provides the Executive Director/CEO with the flexibility to make transfers between approved line items at his/her discretion if the bottom line total expenditure amount

remains the same as was originally approved by the Board of Directors. In the event of a significant adjustment being required within the approved budget, the Executive Director/CEO will revise the budget as appropriate and provide copies of the revised budget to the Finance Committee and Board of Directors.

The operating and capital budget process consists of the following seven phases:

Phase 1. Formulation

This is the draft and proposed phase of the operating budget process by the Executive Director/CEO.

Phase 2. Review and Analysis

The Executive Director/CEO prepares a proposed budget, identifies the impact of alternatives to the proposed budget, makes recommendations, and presents the proposed budget to the Executive Committee and Board of Directors.

Phase 3. The COMET Review and Consensus

The Finance Committee and full Board of Directors will review the proposed budget and alternatives and will determine a recommended budget for submission to the Board of Directors for final approval.

Phase 4. Approval

The Executive Director/CEO submits the recommended budget and alternatives for final board approval. Budget approval requires 1/2 plus 1 majority which represents a quorum of the Board of Directors.

Phase 5. Monitoring

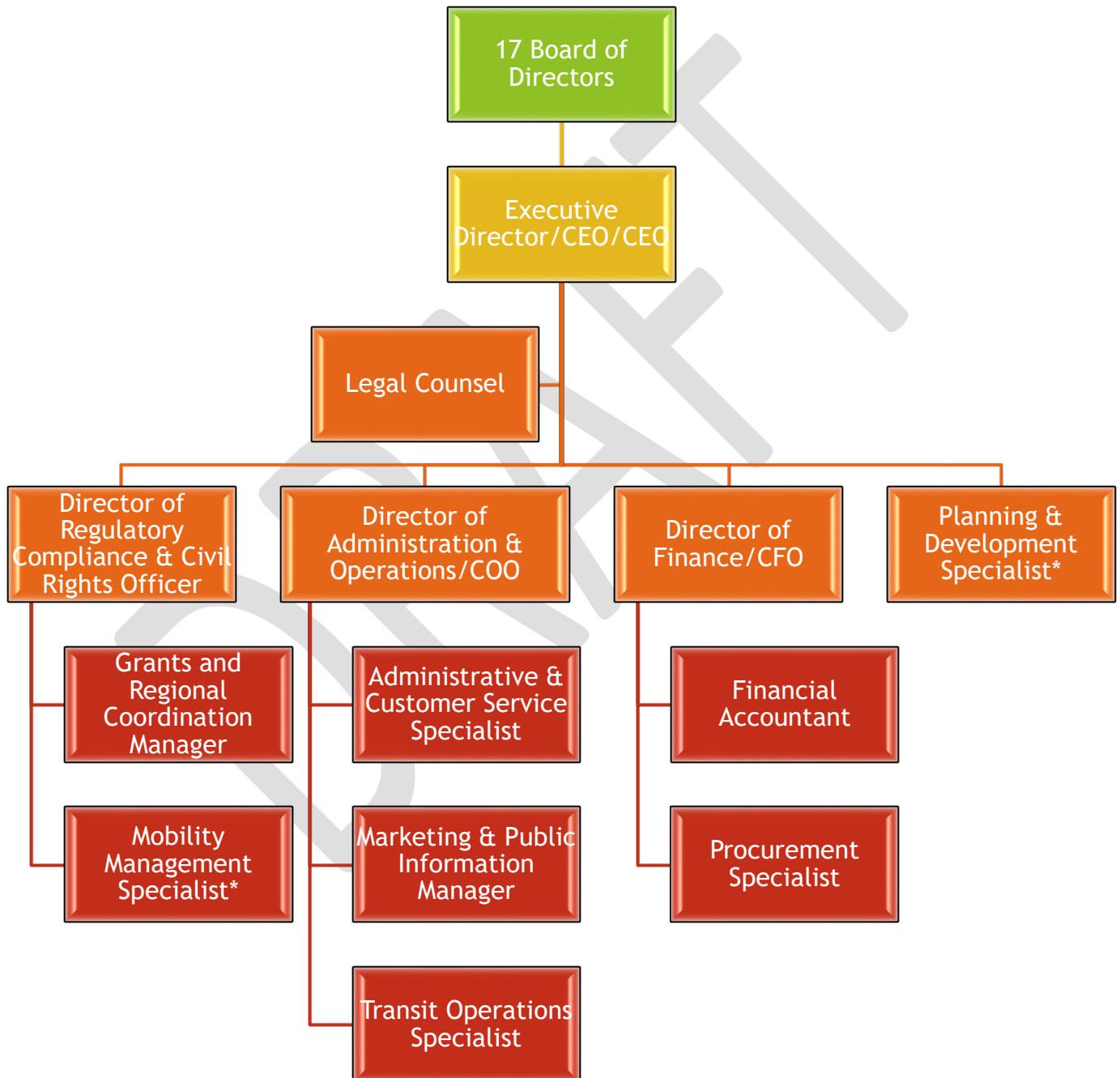
Quarterly Budget Analysis and monthly Financial Statements reports are available to Board of Directors for monitoring actual performance compared to budgeted amounts.

Phase 6. Adjustments

Significant operating budget changes identified during the fiscal year will be summarized by Director of Finance/CFD and presented to the Executive Director/CEO and Board of Directors for approval.



The COMET Organizational Chart





Contact Information

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