FISHER ARNOLD

ENGINEERS | ARCHITECTS | CONSULTANTS | PLANNERS

August 25, 2017

Mr. Craig Light, P.E., City Engineer
City of Jonesboro
300 S. Church Street
Jonesboro, AR 72401

RE: PROPOSAL FOR STORMWATER UTILITY DEVELOPMENT STUDY

Dear Craig:

Fisher & Arnold, Inc. along with Black & Veatch are pleased to submit this proposal to the City of Jonesboro to provide professional services for a Stormwater Utility Development Study. The Scope of Work along with the associated fees and schedule for these services are shown in the attachment. Also attached are resumes from Black & Veatch that demonstrate their abilities and qualifications to provide these types of services. Terms and Conditions are as follows:

An invoice will be sent on a monthly basis until the completion of the project. Payment is due by the 10th of each month.

The obligation to provide further services under the Agreement may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. In the event of termination, Fisher & Arnold, Inc. will be paid for all services rendered to the date of termination.

The fees shown in this proposal are based on the Owner agreeing to limit the Professional's liability for all planning, engineering and analytical services to the Owner due to the Professional's negligent acts, errors or omissions, such that the total aggregate liability of the Professional to all those named shall not exceed the Professional's total fee for services rendered on the project.

We along with Black & Veatch look forward to working with you on this project. Should you have any questions or require additional information, please contact me.

Sincerely,

FISHER & ARNOLD, INC.

Richard E. Gafford, P.E.
Vice President

REG/amm

Cc: Mr. Brad Davis, P.E., Black & Veatch
Ms. Prabha Kumar, Black & Veatch
Mr. Pam Lemoine, Black & Veatch
Mr. Terry Bare, P.S., Fisher Arnold

1801 Latourette Drive
Jonesboro, AR 72404

870.932.2019
Toll Free: 1.888.583.9724

www.fisherarnold.com

This proposal represents the entire understanding between you and us in respect to the "Project" and may only be modified in writing signed by both of us. If this satisfactorily sets forth your understanding of the arrangement between us, please sign the acceptance of this proposed Letter Agreement in the space provided below and return it to us.

ACCEPTED BY:

CITY OF JONESBORO, AR

_____ _____

Name Date

_____

Title

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ATTACHMENT

PROPOSAL FOR A STORMWATER UTILITY DEVELOPMENT STUDY

City of Jonesboro, Arkansas

25 AUGUST 2017

FISHER ARNOLD
ENGINEERS | ARCHITECTS | CONSULTANTS | PLANNERS

BLACK & VEATCH
Building a world of difference.

Table of Contents

Project Understanding and Approach

The City of Jonesboro, Arkansas (City) provides stormwater management services within the City's municipal jurisdiction. The services are provided through a separate storm sewer collection and drainage system and various best management practices. The City roughly includes 80 square miles of service area with 17 square miles of flood plains. The City is subject to the requirements of a Phase 2 National Pollution Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit.

- Ditching and Drainage Capital Improvements
- Primary and Secondary Channel Maintenance
- Federal, State, and Local Regulatory Compliance
- System Capacity Planning and Management

Figure 1 – Key Functions

The City's Engineering and Street Departments are primarily responsible for providing stormwater services within the City. Figure 1 provides a few of the key stormwater services the City provides. The City has significant capital improvement projects including pipe replacements, drainage improvements, and detention ponds rehabilitation that are currently unfunded. The City also anticipates significant expenditures relating to the Corp of Engineers Master Plan for creek improvements. In addition, the City is currently able to only perform annual channel maintenance on 70 miles out of a total of 110 miles of primary and secondary channels.

While the Operations and Maintenance (O&M) and capital improvement drainage needs are increasing, available funding is decreasing, posing a funding crisis. Historically, stormwater O&M and capital improvement needs were funded primarily through a portion of revenues generated from a half cent sales tax for streets and drainage capital expenditure fund. However, the elimination of the use restrictions on that sales tax supported capital expenditure fund has significantly reduced funding for stormwater management.

To address the immediate and long term O&M and capital improvement needs of the City, and to secure sustainable funding, the City desires a comprehensive stormwater utility study (utility study) that would help *develop and implement* a stormwater user fee program. To assist with this utility study, Fisher & Arnold, Inc (Fisher Arnold) has partnered with Black & Veatch Management Consulting LLC, (Black & Veatch), henceforth collectively referred to as the "Fisher Arnold Team".

Black & Veatch's significant national experience and expertise in developing and implementing stormwater utilities effectively complements Fisher Arnold's strong knowledge of the City's drainage system, the community needs, and stormwater engineering.

STUDY OBJECTIVES

The primary purpose of this utility study is to develop an impervious area-based stormwater user fee that can provide a *dedicated, stable, flexible, and equitable* funding mechanism to fully support the City's stormwater management program and associated revenue requirements.

The following are the key objectives envisioned for the Utility Study:

- Assess program needs with respect to O&M, regulatory compliance, and infrastructure management;
- Develop a multiyear financial plan for the stormwater utility to assure financial self-sufficiency to meet all of the annual O&M expenses, support effective capital improvements financing, and other revenue requirements;

- Evaluate an impervious area based fee methodology, related policies, and implementation needs; and
- Develop an impervious area based rate structure and draft stormwater ordinance.

PROJECT APPROACH

To help achieve the stated objectives of this utility study, the Fisher Arnold Team has defined a two-phased project approach as follows:

- **Phase 1:** Development of a Stormwater Utility; and
- **Phase 2:** Stormwater Utility Implementation Management.

Phase 1, which will be discussed in more detail, will include the development of a financial plan, stormwater utility policies, all the technical information necessary to develop an impervious area-based rate structure, and the development of a stormwater Master Account File (MAF). This phase will include significant collaboration with an internal team of City management and staff ("City Team"), and a limited level of stakeholder engagement with the City's Stormwater Management Board ("Board"), to solicit input on key elements of the study.

Phase 2 includes the development of a stormwater user fee credit and appeals programs, implementation support for the implementation of a stormwater billing system, and the development of business processes and procedures for stormwater parcel data management, bill runs, and credits and appeals processing. This phase will also include assistance with public outreach and staff training.

In this proposal, the detailed scope of work is presented *only for the Phase 1 work tasks*. The overall scope of work is organized in to eight task requirements, several of which are interrelated.

Figure 2 provides a graphical illustration of the organization of the eight tasks and their inter-relationships.

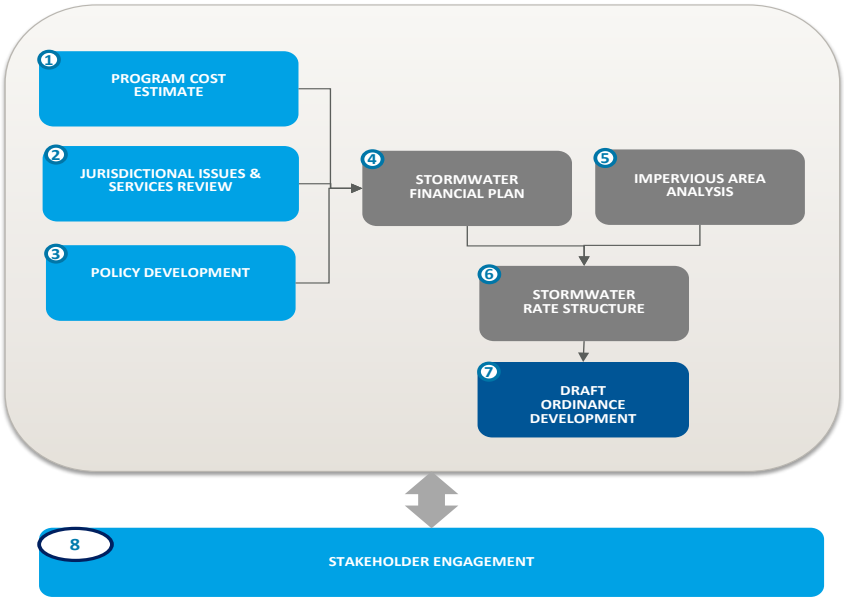


Figure 2 – Phase 1 Tasks

SCOPE OF SERVICES (PHASE 1)

Project Management & Project Initiation

Project Management

The project management component includes general project coordination, staff direction, budget/scope/schedule management, and billing/invoicing activities throughout the course of the project. Specific subtasks include:

- Coordinate project activities among the Fisher Arnold Team, the City project team members (City Team), and the Board. Provide direction as required to meet project objectives and deadlines, and manage project resources.
- Provide quality assurance and control on the work executed by Black & Veatch team and for all the deliverables throughout the engagement.

Project Initiation

A project kick-off meeting will be scheduled with the City Team. The purpose of the kick-off meeting will be to confirm the project objectives, finalize the project schedule, confirm the deliverables, as well as confirm overall project expectations.

The project team will provide the City with an initial data request listing the basic information needed for the project. The data request may include stormwater management related financial and operating data, budgets, list of anticipated capital improvement projects, master plans, ordinances, and pertinent policy documents.

Task 1 – Program Cost Estimate

One of the fundamental principles in "user fee" development is that the fees and charges assessed must reasonably align with the costs incurred in rendering services to customers. Therefore, the Fisher Arnold team will assist the City in delineating existing stormwater O&M and capital improvement program costs using a combination of methods as follows:

- Review the City's historical annual O&M costs for Fiscal Year (FY) 2015 through FY 2018 to understand the historical expenditure trend and the sources of funding;
- Review the City's historical annual capital improvement expenditures for FY 2015 through FY 2018, and the sources of funding;
- **Workshop #1:** Conduct a three-hour workshop with the City Team to define the following:
  - Additional annual O&M functions that are currently not performed and the associated resource needs and annual costs;
  - List of prioritized capital projects that the City needs but are currently unfunded, and additional expenditures anticipated to support the Corp of Engineers Master Plan; and
  - Potential sources of capital funding in the form of any available grants, low interest loans, and other contributions, if any.

  Deliverable: Summary Technical Memo of Stormwater Program Cost Estimates

Task 2 – Jurisdictional Issues & Services Review

In some portions of the City, the City's service area overlaps with two other drainage districts. To address such jurisdictional issues, the Fisher Arnold Team will review potential contribution of stormwater services to the City from the two drainage districts, if any, and assess any unique factors that need to be addressed in the determination of revenue requirements, design of rate structure, and the implementation of a system-wide stormwater user fee and credit program.

Task 3 – Policy Development

In the development of a stormwater user fee program, policies relating to aspects including revenue requirements, fee methodology, rate design, and credit program need to be defined. Clearly defined policies help identify and mitigate risk prior to the implementation phase.

- **Workshop #2:** To develop a policy roadmap, the Fisher Arnold Team will conduct one three-hour workshop with the City Team to discuss and develop policy decisions for the following key areas:
  - Customer Class and Rate Structure: Decisions on the customer class delineation and rate structure design (Tiered rates; uniform monthly fee; individually calculated fee, etc.)
  - Impervious Area Estimation: Confirmation on the approach to use to develop reliable impervious area for all classes of parcels within the service area.
  - Billing and Enforcement: This focus area will involve an evaluation of the practical stormwater billing options that may be appropriate for billing the stormwater user fee and for enforcement. Evaluation of billing options will pertain to:
    - Commercial off-the shelf stormwater billing system;
    - Cloud based stormwater billing solution;
    - Custom developed stormwater billing application; and
    - Potential stormwater billing through any available tax billing system.

    Aspects such as frequency of billing; approach to billing stormwater user fees for multi-unit dwellings such as condominiums; and enforcement of delinquencies will also be evaluated.
  - Credit Program: Policies to be addressed include the types of stormwater management practices that should be recognized under the credit program; and the technical criteria for the program.
- On completion of the workshop, we will develop a policy issues memo to document each policy issue, the factors considered in the evaluation, and recommendations for each key issue that is evaluated. A draft memo will first be presented to the City Team and a final memo incorporating any suggested changes will be presented.

  Deliverable: Summary Technical Memo of Policy Issues

Task 4 – Stormwater Financial Plan

The objective of this task is to develop a five-year Stormwater Utility Financial Plan for the study period of FY 2019 through FY 2023. The five-year financial plan forecast will be developed based on the program costs delineated in Task 1.

- **Capital Funding Analysis:** The team will evaluate capital financing options for the City's defined capital improvement program. The typical capital financing options include low-interest loans, bond financing, grants, pay-as-you go cash financing, and other contributions to support capital investment. The specific task is as follows:
  - Develop the capital financing mix for the capital program that is finalized for the existing and enhanced level of service, and the associated future debt service; and
- **Project Stormwater Revenue Requirements:** In addition to determining the capital financing mix, the team will project other costs that are directly attributable to stormwater utility for a five-year period as follows:
  - Project recurring annual O&M costs, applying reasonable escalation factors, and operating reserve requirements, for the existing and enhanced level of service;
  - Estimate any one time stormwater utility implementation cost; and
  - Project a five-year annual stormwater revenue requirements as an aggregation of the various annual costs projected.

The potential revenues generated from other sources, such as grants, loans, and other miscellaneous fee revenues will be also be projected for the planning period. These revenue sources are important for determining the net level of future revenues that need to be generated from the stormwater user fees.

Deliverable: Draft and Final Five-Year Stormwater Financial Plan Tables

Task 5 – Impervious Area Analysis

This task involves the stormwater impervious area analysis and the determination of system-wide stormwater billing units. The purpose of this task is to develop two key parameters that are essential for developing the user fee:

- The system wide stormwater billing unit commonly defined as Equivalent Residential Unit (ERU) square footage value; and
- The total billable impervious area and ERUs for the classes of properties that are defined.

To perform this impervious analysis task, parcel information and other land use attributes from Craighead County's (County) Geographical Information System (GIS), tax assessors system, and other relevant and available datasets will be utilized.

Task 5.1—Define Classes of Properties

The key subtasks will include the following:

- The Fisher Arnold team in collaboration with the City Team will define classes of properties such Residential, Non-residential (churches, schools, City-owned properties, etc.), Condominiums, Agricultural, and other classes as may be necessary. The classes of properties will be defined based on occupancy codes (land use codes) that are available in the County's tax assessor's system.
- Coordinate with the County to resolve parcel records where the occupancy code value may be missing.

Assumption: For parcel records, where the Occupancy Code value is available, the Fisher Arnold team will assume those values are accurate.

- Assign a stormwater class to each parcel based on the parcel's primary occupancy code, and compile a summary of parcels by stormwater class.

Task 5.2— Define Impervious Area Capture Approach for Residential & Non-residential Classes

The Impervious Area estimation approach is driven by factors including *data availability; ease of compilation; ongoing parcel data management; work effort and cost of impervious area capture;* and *the desired rate structure.* Based on a very preliminary review of the publicly available County assessor's data and discussions held with the City regarding alternative approaches to the development of estimated impervious area data, the City has determined the following approach is the preferred approach to estimating impervious area, as shown in Figure 3.

Figure 3 – Approach to Estimate Impervious Area

CUSTOMER CLASS	APPROACH #2
Residential	Determine Impervious Area directly from the *square footage of structures and improvements* available in the County's Tax Assessor Data **Assumption:** No digitization of impervious area
Non-Residential & Condominium	Determine Impervious Area through digitization of hardscaped surfaces **Assumption:** Digitization of up to 3,400 parcels.
Vacant Land (without structures)	Runoff Coefficient applied to Total Lot Size

This approach will help mitigate any data reliability and quality issues if the impervious area is digitized for each non-residential parcel, per the impervious area protocol that will be defined.

Task 5.3— Determine Billable Impervious Area Units

To determine the billable impervious area units for the City's entire service area, the Fisher Arnold Team will perform the following subtasks:

- *Develop System-wide Impervious Area Units:* Based on the impervious area approach determined in Task 5.2, the Fisher Arnold team will develop the impervious area for each parcel, and aggregate those by customer class.
- *Determine Equivalent Residential Unit (ERU):* Using the impervious area square footage determined for each Single Family Residential parcel, we will calculate the Mean and Median impervious area. Based on the results of the Mean and Median impervious area square footage of the single family residential properties, as appropriate, one of those values will be defined as the system-wide ERU, which will be the basic unit of measure for estimating stormwater contribution.

In addition, a distribution analysis on the residential impervious areas will be developed so that the results of the distribution analysis could be subsequently used in the residential tiered rate structure analysis.

- *Develop System-wide Impervious Area Units:* Using the system wide ERU value that is defined, the impervious area square footage determined previously for the Residential and Non-residential categories of parcels will be translated into ERUs. Based on the aggregate of the Residential and Non-Residential ERUs the total preliminary system-wide stormwater units will be determined.
- *Develop Final Billable Impervious Area Units:* Based on discussions with the City Team, we will determine the level of adjustments that need to be made to the initial system-wide ERUs. Such an adjustment is essential to account for potential revenue loss due to potential credits/appeals and other billing policies that are defined, to develop an estimate of the final billable impervious area for the system.

Deliverable: Summary Impervious Area Analysis and Results Tables

Task 6 – Stormwater Rate Structure

This task involves the design of an impervious area based rate structure, and the development of a draft rate ordinance.

On completion of Tasks 4 and 5, we will evaluate two alternative rate structures recognizing factors such as *equity of cost recovery, ease of understanding, legal integrity,* and *administrative simplicity*. We will identify the pros and cons for each alternative and discuss preferences with the City and present the comparison and discussions in a technical memo.

To design and evaluate the two alternative rate structures, the Fisher Arnold team will perform the following subtasks:

- *System-wide ERU Rate:* The system wide ERU rate will be determined by applying the stormwater revenue requirements determined in Task 4 to the ERUs developed in subtask 5.3. This ERU rate will then be used to design the rate structure.
- *Rate Structure Alternatives:* Evaluate the residential and non-residential rate structure options, which would include a tiered or uniform residential rate and an individually calculated charge based on the ERU rate for the non-residential class.
- *Stormwater Fee Comparison:* Once the rate structure has been finalized, we will provide a comparison of the City's proposed residential monthly bill with that of 6 peer stormwater utilities.

Deliverable: Summary Stormwater Rate Schedules

Task 7 - Draft Ordinance Development

We will provide the City Team with up to *three* examples of stormwater ordinances from other communities for its consideration in drafting a new ordinance reflecting the new rate schedule and policies. Upon completion of the draft ordinance by the City, the Fisher Arnold team will review the draft ordinance and provide feedback on the ordinance.

Task 8 – Stakeholder Engagement

Stakeholder engagement during the development of an impervious based fee is often very helpful to garner community acceptance and buy-in. Therefore, we recommend that the City consider a balanced approach to stakeholder engagement to solicit inquiries, understand stakeholder concerns and mitigate potential challenges.

Specific subtasks include the following:

Task 8.1—Stormwater Advisory Committee (SWAC)

The project team will assist the City in defining the composition of the SWAC, their role and responsibilities during the Phase I study.

Assumption: It is assumed that the City's existing Stormwater Management Board will serve as the SWAC.

Task 8.2—Stakeholder Outreach and Engagement

To engage both internal and external stakeholders alike, the Fisher Arnold Team will conduct the following workshops, working sessions, and presentations. Materials that are to be utilized in conducting these work sessions and presentations will be reviewed with staff prior to distribution.

- *Stormwater Advisory Committee Workshops*—The Fisher Arnold team will conduct three 3-hour workshops, at critical milestones, to educate the SWAC on the study and solicit input on key policy issues and concerns. The anticipated milestones for the workshops are (i) Stormwater Revenue Requirements; (ii) Stormwater Utility Policies; and (iii) Stormwater Rate Structure.
- *Conduct Work Sessions*—It is anticipated that five work sessions will be held with the City Team. These five work sessions are important for providing appropriate level of Fisher Arnold team & City interaction, exchanging ideas, and developing appropriate recommendations. We recommend the following five work sessions:
  i. Kickoff meeting with City management and staff to review the scope of service and discuss the proposed timeline.
  ii. Program Cost Delineation work session (Task 1) to determine program costs and discuss Jurisdictional Issues and Services (Task 2).
  iii. Policy Development work session (Task 3) to review and develop policy positions.
  iv. Stormwater Financial Plan work session (Task 4) to review and finalize the results of the five-year financial plan.
  v. Stormwater Rate Structure work session (Task 6) to review alternative rate structure for residential class and finalize the residential and non-residential rate structure.
- *City Council Presentations*—The Fisher Arnold team will assist the City Team in conducting up to two presentations to the City Council.

SCOPE OF SERVICES (PHASE 2)

Following the completion of Phase 1, if the City decides to move forward with implemention of the impervious area based stormwater fee, a detailed scope, schedule and fee for Phase 2 will be developed and submitted to the City for consideration, if requested.

KEY ASSUMPTIONS

Following is the summary of assumptions that pertain to the Phase 1 scope of services discussed above:

- *Program Cost:* The stormwater O&M and capital program costs will be determined based on existing costs that the City will provide and based on additional O&M and capital cost assumptions that the Fisher Arnold team will discuss with the City during work session #1. The cost estimation will not entail any detailed engineering analysis or life-cycle cost estimation;
- *Policy Development:* In Task 3, a total of *40 hours* is assumed for the work effort specific to the evaluation of options for stormwater billing. The work effort will be limited to researching four billing options and defining the pros and cons of each of the four options. Development of billing system requirements and/or specifications is not part of this evaluation.
- *Impervious Area:* In Task 5, the scope of work assumes a digitization of up to *3,400 non-residential parcels*. In addition, a total of 20 hours is assumed for coordination with the County to resolve missing data issues. Available data from the County is assumed to be fairly accurate.
- *Stakeholder Engagement:* A total of five work sessions, three SWAC workshops, and two council presentations are assumed for stakeholder engagement.

PROJECT SCHEDULE

It is assumed that the scope of services described for Phase 1 will require a total of 10 months from the time of notice to proceed, and the expected study timeline is September 15th, 2017 through June 30, 2018. This tight schedule assumes timely coordination of all the work sessions and the SWAC workshops.

PROJECT FEE

The project fee is estimated based on the scope of services that has been defined. Figure 4 presents the work effort and the project fee for the scope of services.

Figure 4 Project Fee

Stormwater Utility Development Study - Approach 2

Project Task	BV Hours	Fisher Arnold Hours	Total Hours	BV Fee	Fisher Arnold Fee	Total Fee
Project Management and Project Initiation	33	15	48	$ 7,205	$ 2,175	$ 9,380
Task 1.0 - Program Cost Estimate	22	18	40	$ 4,960	$ 2,610	$ 7,570
Task 2.0 - Jurisdictional Issues and Services Revi	12	0	12	$ 2,370	$ -	$ 2,370
Task 3.0 - Policy Development	74	10	84	$ 16,530	$ 1,140	$ 17,670
Task 4.0 - Stormwater Financial Plan	52	6	58	$ 10,065	$ 990	$ 11,055
Task 5.0 - Impervious Area Analysis	115	713	828	$ 24,355	$ 51,515	$ 75,870
Task 6.0 -Stormwater Rate Structure	24	8	32	$ 4,660	$ 600	$ 5,260
Task 7.0 -Draft Ordinance Development	10	1	11	$ 1,910	$ 135	$ 2,045
Task 8.0 - Stakeholder Engagement	128	43	171	$ 30,345	$ 7,245	$ 37,590
Direct Expenses				$ 4,500	$ 510	$ 5,010
TOTAL PROJECT HOURS AND FEE	**470**	**814**	**1,284**	**$ 106,900**	**$ 66,920**	**$ 173,820**

APPENDIX

The resumes of key subject matter specialists that will be leading the various tasks in the study are included.

Stormwater Utility Development and Implementation

Philadelphia Water Department, City of Philadelphia, Pennsylvania

Since 2008, Black & Veatch Management Consulting, LLC has assisted Philadelphia Water Department (PWD) in developing a parcel area based stormwater user fee program. The project involved changing the basis of stormwater billing from a meter size based charge to a parcel gross and impervious area based charge. The primary goal of the transition to a parcel area based charge was to enhance the equity of recovery of the stormwater management and Combined Sewer Overflow (CSO) mitigation costs.

Project Elements
- Stormwater Revenue Requirements
- Stormwater Financial Plan
- Impervious Area Analysis
- Stormwater Rate Structure
- Credits/Appeals Program Design
- Stormwater user fee program business process
- Staff Training
- Manuals and FAQs

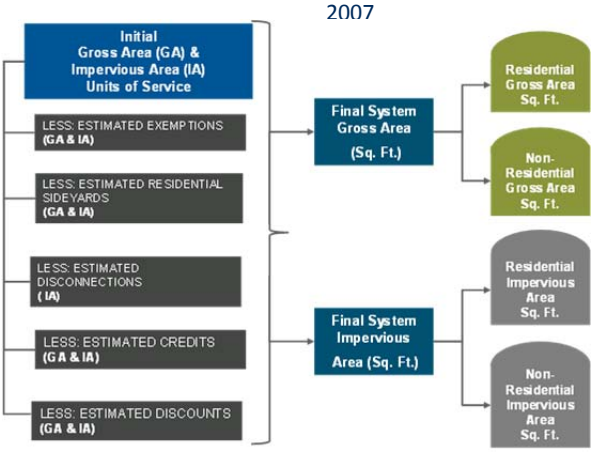
Key Team Members
- Prabha Kumar (Director)
- Brian Merritt
- Dave Jagt
- Rupa Jha

Period of Service
Continuous service since 2007

Phase I: Rate Study and Rate Case Support (2007 – 2008)

(i) ***Financial Analysis***: This task included financial planning, cost of service allocation, determination of revenue requirements and capital project financing. Black & Veatch performed a detailed revenue requirements analysis to develop a six-year financial plan. The financial analysis also included a detailed cost of service analysis. Integral to the cost of service analysis was a detailed technical analysis to allocate combined sewer system (CSS) costs between Sanitary Sewer and Stormwater utilities, and a further allocation of costs to customer classes.

(ii) ***Rate Structure Design:*** Black & Veatch conducted an impervious area analysis and defined the rate structure for residential and non-residential customer classes. The stormwater user fee was designed to include both a Gross Area (GA) Charge and an Impervious Area (IA) Charge. The rate structure designed included a uniform monthly fee for residential parcels, and an individually calculated user fee for the non-residential parcels. In addition, Black & Veatch assisted in designing and implementing the stormwater credits and appeals program.



(iii) ***Policy Development:*** This task included the development of policies relating to billing stormwater user fees, enforcement, payment posting, cost allocation, credits/appeals program, and rate structure design.

We also assisted in drafting PWD regulation sections pertaining to parcel area based stormwater charges and credits program.

(iv) ***Rate Case Support:*** Black & Veatch provided rate case support during stormwater rate hearings and provided expert witness testimony.

Phase II: Implementation Management (2009 - 2010)

During the implementation phase, Black & Veatch coordinated and managed the implementation task efforts of ***six functional task teams*** and the ***Stormwater Implementation Steering Team.***

The functional task teams included: (i) Stormwater Database Application Development and Implementation; (ii) Billing Integration; (iii) Bill Design; (iv)

Credits and Appeals program; (v) Commercial Customer Service; and (vi) Public Outreach and Education. Implementation plans for each of these functional areas were prepared.

The implementation support also included assistance with developing system requirements for the stormwater credits/appeals web application, testing, staff training for 180 employees, and public outreach notifications.

Documentation prepared included the FAQs, Credit/Appeals Manual, Bill Inserts, "Know your Rights Brochure", and training presentations and handouts.

As part of the public education and outreach efforts, business breakfasts, open houses, and mass mailing of "fact sheets" to each individual non-residential property owner were conducted. The parcel area based stormwater charge went live on July 1, 2010.

Phase III: Post-Implementation Services

2011-2012: Prior to the 2012 stormwater rate case, Black & Veatch stormwater specialists participated in a series of 10 Citizens Advisory Committee (CAC) meetings that the Water Department hosted to review several stormwater policy and technical issues. The diverse issues included stormwater cost allocation, user fee method, direct dischargers, residential rate structure, credit program and incentives program.

For the 2012 rate case, Black & Veatch performed a stormwater rate study update and also provided expert witness testimony in the stormwater rate hearing proceedings and provided multiple interrogatory responses and briefings. The recommended rate increase and cap program were approved and implemented.

2015 – 2016: Black & Veatch completed a water, sewer, and stormwater rate study that included financial planning, cost of service analysis, rate schedule development. In addition, the study included extensive rate case support and separate testimonies for the water/sewer and stormwater rate study including expert witness testimonies at Rate Board hearings.

Stormwater Utility Development

City of Springfield, Ohio

Black & Veatch has provided consulting services to the City of Springfield's water and wastewater utilities for over 25 years and in 2011, Black & Veatch Management Consulting, LLC completed a storm water utility financial planning and utility implementation for the City. Using Black & Veatch's integrated feasibility study framework, the project team completed the following tasks:

- Evaluated operational program needs, and capital improvements program and financing.
- Determined revenue requirements including O&M costs, debt service, and reserves.
- Developed storm water utility billing and enforcement, and credit/appeals program policies.
- Determined effective impervious area using a combination of structural and other improvement footprints from the County's Tax Assessment System, runoff coefficient for vacant land, and digitization of impervious area for a large number of non-residential parcels.
- Defined the Equivalent Residential Unit (ERU) rate based on the average impervious area of the single family residential class.
- Performed a distribution analysis of the impervious area of the Single Family Residential parcels to develop a four-tiered rate structure for single family residential class. For the non-residential parcels user charge is individually calculated based on the defined ESU rate and parcel specific impervious area.
- Developed rate schedule and draft stormwater rate ordinance, and a white paper on storm water appeals and credit program
- Developed a public outreach plan with assistance from a public relations firm.

As part of the project, the Black & Veatch team conducted a series of four workshops with a 14 member Stormwater Advisory Committee (SWAC), and also assisted with conducting a City Council retreat, and Council presentations. The storm water charge became effective January 1, 2012.

Project Elements
- Stormwater Revenue Requirements
- Stormwater Financial Plan
- Impervious Area Analysis
- Stormwater Rate Structure
- Credits/Appeals Program Design
- Public Outreach Plan
- SWAC Workshops

Key Team Members
- Prabha Kumar (Director)
- Pam Lemoine
- Anna White
- Jeff Henson

Period of Service
2010 - 2011

Stormwater Utility Development and Implementation

City of Wilmington, Delaware

Project Elements
- Stormwater Revenue Requirements
- Stormwater Financial Plan
- Impervious Area Analysis
- Stormwater Rate Structure
- Credits/Appeals Program Design
- Stormwater user fee program business process
- Staff Training
- Manuals and FAQs
- Public Outreach

Key Team Members
- Prabha Kumar (Director)
- Mike Borchers
- Rupa Jha

Period of Service
Continuous service since 2007

Since 2007 Black & Veatch Management Consulting, LLC has been providing stormwater advisory services to the City's Department of Public Works. In 2007, Black & Veatch completed the development and implementation of a stormwater utility to facilitate equitable recovery of costs associated with the City's Combined Sewer Overflow (CSO) mitigation and integrated stormwater management.

Since 2009, Black & Veatch has been providing annual stormwater billing operations, financial planning, and advisory support.

The scope of services provided includes the following tasks:

Utility Feasibility Analysis and Rate Structure Development (2006 – 2007)

(i) ***Financial Analysis:*** This task involved the determination of stormwater revenue requirements through a detailed cost allocation modeling. The model was developed to allocate the City's combined wastewater enterprise fund costs into sanitary sewer, and stormwater costs, as over 90% of the City's service area comprises a Combined Sewer System (CSS). A five year financial plan was developed.

(ii) ***Rate Structure Analysis:*** This task involved an evaluation of user fee methodologies and the selection of a user fee methodology. The user fee that was designed is based on actual impervious area for the residential parcels, and an estimated impervious area for the non-residential parcels. The impervious area was estimated using land use based runoff coefficients. A system wide Equivalent Stormwater Unit (ESU) was defined based on the *Median* impervious area of the Single Family Residential class.

A distribution analysis of the impervious area of the Single Family Residential parcels was performed to develop a four-tiered rate structure for single family residential class. For the non-residential parcels user charge is individually calculated based on the defined ESU rate and parcel specific impervious area.

(iii) ***Policy Development:*** This task involved the design of a stormwater credit program with three types of credits and an appeals program to address customer appeals and disputes. This task also included the development of billing, enforcement, and payment posting policies.

(iv) ***Organization:*** This task involved the determination of staffing needs and roles/responsibilities, and the development of business workflows and processes for ongoing parcel data management, bill run and audit process, the credits and appeals process, staff training, and customer service.

Implementation Management

(i) ***Billing Integration:*** Black & Veatch assisted the City with parcel – utility account cross referencing task to integrate the stormwater user charge billing into the City's quarterly water/sewer utility bill.

(ii) ***Stormwater Parcel Database Application:*** Black & Veatch also developed a robust, MS- Access based *Stormwater Parcel Data Management Application* to import and process parcel impervious area, generate billing determinants, and to track and process fee adjustments appeals and credit requests. The Stormwater Parcel Database application went live in February 2007.

(iii) ***Documentation and Training:*** During the implementation phase, Black & Veatch assisted in establishing a memo of understanding with the County tax assessor's office for ongoing receipt of parcel data, and developed Credits and Appeals Technical Manual/Forms and Stormwater Frequently Asked Questions (FAQ)s. Staff training was planned and executed.

(iv) ***Public Outreach:*** The Public Outreach efforts included workshops to elected officials, open houses in each council member's district, and for the City administration. Black & Veatch also drafted a series of customer notifications to inform the customers about the upcoming stormwater fees and its impact on the overall bill, and also assisted the City in conducting "Open Houses" to educate the public on the need for and the impact of a stormwater fee.

Ongoing Advisory Support

Since 2007, Black & Veatch has also been providing ongoing monthly stormwater billing operations support, field investigations for stormwater credit requests, and on-call stormwater financial and policy advisory services. In addition, we perform annual updates to the City's stormwater credits and appeals manual, financial planning, and provide technical database support for any database enhancements.

Prabha Kumar

Ms. Kumar is a Director in Black & Veatch's Management Consulting, LLC. She leads the water, wastewater, and stormwater utilities offering within the Advisory & Planning group. Ms. Kumar specializes in stormwater utility feasibility studies, utility development, and implementation, and helping utilities with both internal stakeholder education and engagement, and external public education and outreach. She has assisted various large and small water and wastewater utilities with business process reengineering, and with designing, implementing, and tracking improvement initiatives in the areas of utility metering, billing, customer engagement, and field services operations.

Ms. Kumar's comprehensive utility consulting expertise includes financial planning, cost of service, and rate design studies, strategic planning, business process review and transformation, and providing expert witness and litigation support services in municipal utility rate cases and utility litigation matters.

Ms. Kumar is an active member of the Stormwater Committee within the National Association of Clean Water Agencies (NACWA) and an active member of the Water Environment Federation. She contributed as a Lead Author for the updates to the 2nd edition of the WEF manual, *"User Fee Funded Stormwater Programs".*

PROJECT EXPERIENCE

New York City Department of Environmental Protection | Stormwater Utility Feasibility Study | 2016

Technical Advisor. Ms. Kumar serves as the technical advisor in the ongoing stormwater user fee feasibility study. The stormwater utility policy workshop has been completed. The stormwater cost allocation, impervious area analysis to develop stormwater units of service, development of a five-year stormwater revenue requirements, development of stormwater rate structure are all in progress. This work is being performed under a subcontract to another engineering firm.

City of Newark, Delaware | Comprehensive Water, Wastewater, Stormwater Utility Cost of Service and Rate Study | 2016

Project Director. As Project Director, Ms. Kumar directed the water and wastewater cost of service rate study and the development of a new stormwater utility for the City. The cost of service study involved projection of revenues and revenues requirements; CIP review and financing; cash flow analysis; and determination of multi-year revenue adjustments. The stormwater utility development study included stormwater cost allocation; development of impervious area based rate methodology and stormwater rate structure, user fee and billing policies, and implementation plan. The study included four City Council workshops, and the Council has approved the water/sewer rate increase and the implementation of a new stormwater utility. Implementation is currently in progress.

DIRECTOR

Specialization:
Financial Planning
Rate Studies
Business Operations Review & Optimization
Stormwater Utility Development
Stakeholder Engagement
Database Applications Development & Implementation
Billing Systems Needs Assessment

Education
- M.B.A, MIS & Marketing
- University of California, Riverside
- M.Phil., English Literature
- Madras University, India
- M.A., English Lang. & Literature
- Madras University, India
- B.A., English Lang. & Literature
- Madurai-Kamaraj University, India

Professional Associations
- American Water Works Association
- NACWA Stormwater Committee
- Water Environment Federation

Year Career Started
1999

Year Started with B&V
1999

Philadelphia Water Department, City of Philadelphia, Pennsylvania | Water, Sewer, Stormwater Cost of Service and Rate Study | 2016

Technical Director. Ms. Kumar directed the water, sewer, stormwater cost of service analysis, and rate study update and bond feasibility services for the Philadelphia Water Department. The study involves a six-year financial planning, bond issuance support, cost of service analysis, wholesale and retail rates update, rate case testimony and expert witness services. The 2016 rate case hearings were successfully completed and rates were approved. In March 2015, bond engineering and feasibility report was provided to support the issuance of Series 2015 bonds of $417.0 Million. In 2012, Ms. Kumar was involved in 10 Citizens Advisory Committee (CAC) meetings that were held to review several stormwater policy and technical issues. The diverse issues included stormwater cost allocation, user fee method, direct discharges, residential rate structure, credit program and incentives program. Ms. Kumar collaborated with the Water Department in the design of the non-residential stormwater customer assistance program.

City of Wilmington, Delaware | Water, Wastewater, Stormwater Utility Annual Financial Planning and Rate Study | 2016

Project Director. As Project Director, Ms. Kumar has continually managed the water, wastewater and stormwater annual financial planning and cost of service study services for the City of Wilmington since 2006. The latest financial plan which was developed for Fiscal year 2017 through 2022, involved projection of revenues and revenues requirements; CIP review and financing; cash flow analysis; cost of service analysis; water, sewer, and stormwater rates update; wholesale wastewater treatment fee true-up, and benchmarking. The annual study also included briefings and presentations to the Utility Citizen's Advisory Board (UCAB) and to the City Council.

Pittsburgh Water and Sewer Authority (PWSA), Pittsburgh| Stormwater Management and Rate Structure Project | 2012 & 2016

Technical Advisor. In 2012, Ms. Kumar assisted in the Phase-1 Stormwater Feasibility Study. During this phase, she directed the tasks pertaining to the development of combined sewer cost allocation analysis, stormwater revenue requirements analysis, user fee funding options evaluation and Equivalent Residential Unit (ERU) rate development. In 2016, Ms. Kumar assisted with a more in-depth Stormwater User Fee Development and Implementation planning. This phase involved stormwater program assessment, updates to the stormwater cost allocation and revenue requirements, policy development, development of a five-year financial plan, stormwater rate structure development and Citizens Advisory Group and PWSA Board education and engagement.

DC Water | Budget Cost Allocation for the Maturity Model | 2016

Project Director. Ms. Kumar directed the development of a budget cost allocation model for the Human Resources and IT cost centers for DC Water.

The purpose of this cost allocation is twofold – (i) map the existing business process to the newly defined business processes under the Business Maturity Model; and (ii) reallocate the FY 2016 O&M and capital equipment budgets from the existing activity units to each of the new business processes. An extensive matrix of activity mapping and personnel and non-personnel cost delineations by activity were developed to accomplish the re-allocation of FY 2016 budget to the new business processes that DC Water will use going forward for the HR and IT functions. A technical report and model on the cost re-allocation was provided.

City of Wilmington, Delaware | Stakeholder Education and Engagement Services | 2016

Project Manager. Ms. Kumar directs the stakeholder engagement and education on water, sewer, stormwater services for the City of Wilmington's *Utilities Citizens Advisory Board* (UCAB). As part of this task, Ms. Kumar conducts monthly stakeholder meetings with the UCAB members and the City's Executive Management to educate, engage, and solicit feedback on a variety of utility related issues including financial planning, rate setting, capital program planning and financing, asset management, business optimization, and water loss management. Ms. Kumar is responsible for the preparation of presentation materials and whitepapers, and facilitates the discussions.

Pittsburgh Water and Sewer Authority (PWSA), Pittsburgh| Stormwater Management and Rate Structure Project | 2016

Technical Director. In 2016, Ms. Kumar directed the Phase 2 – Stormwater User Fee Development and Implementation. This phase involved stormwater program assessment, updates to the stormwater cost allocation and revenue requirements, user fee and billing policy development, development of a five-year financial plan, stormwater rate structure development and PWSA Board education and engagement. This work was performed under a subcontract to another firm.

Harford County, Maryland | Comprehensive Utility Rate Study | 2015

Project Manager. Ms. Kumar lead a comprehensive water/sewer utility revenue study for Harford County. This comprehensive study included Operating and Capital Funding Analysis; Infrastructure Reinvestment Forecasting; Billing Period Modification Analysis; Labor Resource Analysis; Connection Fee Study; Electronic Bill Payment Investigation; Rate Benchmarking; and Rate Seminar. The financial results from the diverse tasks were integrated in to a comprehensive six-year financial plan, and cost of service analysis. A new "Asset Reinvestment Charge" was developed to generate a stable and dedicated funding for water and sewer infrastructure renewal and rehabilitation. A significant component of this study was the successful education of the City Administration and City Council on utility financial planning and rate setting, through a series of workshops and comprehensive presentations. The Council approved a series of five annual increases (FY 2016 through FY 2020).

Philadelphia Water Department, City of Philadelphia, Pennsylvania | Stormwater Utility Operations Knowledge Management| 2014

Technical Director. Ms. Kumar recently assisted the Water Department's stormwater utility management team with a comprehensive knowledge capture of the stormwater utility billing, credits, incentives, and retrofits programs. The initiative involved facilitating a series of twelve (12) workshops with the Water Department staff to document workflows, enhance business processes, and define policies, and determine key issues that need to be resolved.

City of Providence, Rhode Island | Upper Narragansett Bay Regional Stormwater Authority Feasibility Study – Phase 1| 2014

Technical Lead: Ms. Kumar provided subject matter expertise in defining alternative frameworks for the regional stormwater authority feasibility study that included six municipalities. She assisted with presentations and discussions with the steering and stakeholder committees to evaluate the alternatives. Ms. Kumar contributed to both the organization and the content of the feasibility report and also assisted with developing the three phased "feasibility to implementation" framework that was incorporated in to the hurricane sandy coastal resiliency grant application.

City of Olathe, Kansas | Stormwater Rate Restructure Study | 2013

Technical Director: Ms. Kumar provided technical guidance for the stormwater rate restructure implementation project for the City of Olathe. Black & Veatch team assisted the City in transitioning from gross area based rates to impervious area based rates and charges for the City's stormwater utility. Ms. Kumar lead the issues and policies meeting with the City at the beginning of the project to review and refine policies pertaining to user fee methodology and billing.

Miami-Dade County Water and Sewer Department (WASD), Miami| Review of Meter Reading and Billing Practices | 2012

Technical Advisor. Ms. Kumar directed a management review of the meter reading; meter services; and billing operations for WASD. The study included a comprehensive and objective review of business processes and workflows, policies, technology and resource issues; an identification of improvement opportunities; and the development of improvement strategies.

Henrico County, Richmond, VA| Stormwater Utility Study | 2011

Task Lead. As a Task Lead, Ms. Kumar directed the policy development, stormwater financial planning, and funding options evaluation. The study included program review and level of service alternatives evaluation, financial planning and funding options analysis, impervious area analysis, and rate structure evaluation. The study also included a preliminary review of credits program, appeals process, and billing options evaluation.

City of Springfield, Ohio | Stormwater Utility Feasibility Study | 2011

Technical Director. As a technical director, Ms. Kumar completed a stormwater utility feasibility study. She provided technical guidance on stormwater utility policy development; parcel data analysis and estimation of billable units of service, rate design; stormwater database development, billing integration, and stormwater credits and appeals program. Ms. Kumar facilitated the policy workshop and user fee methodology workshops that the City conducted for the Stormwater Advisory Committee.

City of New London, Connecticut |Stormwater Utility Feasibility Study | 2010

Technical Director: As a technical director, Ms. Kumar directed a stormwater utility feasibility study, which was completed in 2011. In the feasibility study, Ms. Kumar provided technical guidance on financial planning; stormwater utility policy development; parcel data analysis and estimation of billable units of service, rate design; stormwater database development, billing integration, and stormwater credits and appeals program.

Philadelphia Water Department | Stormwater Implementation Management Services, City of Philadelphia, Pennsylvania | 2009 – 2011

Project Manager. Ms. Kumar served as the implementation manager for the Philadelphia Water Department in its parcel area based stormwater charge billing implementation. Phase 1 of the consulting services included stormwater cost allocation analysis, rate restructuring, and rate case testimonies. During Phase 2, implementation management, Ms. Kumar lead and coordinated the activities of six teams as follows: (i) Stormwater Database Application Development (ii) Billing Integration; (iii) Bill Design; (iv) Credits and Appeals program development; (v) Commercial Customer Service; and (vi) Public Outreach/Education.

City of Dallas, Texas | Stormwater Rate Study | 2009

Technical Advisor. Ms. Kumar served as a technical advisor in this study. Ms. Kumar led the parcel analysis and determination of stormwater units of service efforts for the City of Dallas Stormwater Rate Study update project. The study involved an evaluation of user fee methodology and alternative rate structures; distribution analysis for tiered rate structure; development of recommendations for proposed changes to user fee methods and rate structure, parcel analysis to develop billable stormwater units of service; and report development.

City of Wilmington, Delaware | Storm Water User Fee Program Development and Implementation | 2006 – 2008

Project Manager. As Project Manager, Ms. Kumar completed the development and implementation of a stormwater utility and credit program for the City of Wilmington. Phase I involved the design and development of a stormwater utility. This included the implementation of a stormwater billing program along with a stormwater credits and appeals program, and the implementation of a

stormwater billing database application. The study also involved extensive public outreach activities including conducting "high impact" customer meetings, and presentations to the City's Mayor's Office, Administrative Board, and to the City Council.

SELECTED PUBLICATIONS

"Harford County's Integrated Management and Innovation Drives the Transition from Financial Crisis to Financial Resilience". Presented at the 2016 Utility Management Conference, February, Tampa, Florida.

"Transformational Financial Planning and Rate Setting: The New Paradigm in Building Financial Resiliency and Customer Acceptance". Presented at the 2016 Association of Metropolitan Water Agencies Annual Conference, Scottsdale, Arizona.

"Tools to Improve Utility Performance – Financial Resilience through Integrated Financial Management". Presented at the 2016 Maine Water Utilities Association Conference, Portland, Maine.

"Agile Stormwater Programs and Incentives Drive Cost Effective Long Term Control Plan Compliance". Presented at the October 2015 New England Water Environment Association Specialty Conference, Lowell, Massachusetts.

"Developing Stormwater Program Requirements and Rate Structures". Presented at the September 2015 WEFTEC Conference, Chicago, Illinois.

"Sustainable Wet Weather Funding Can be Achieved by Designing and Managing Multi-objective Stormwater Utility Programs". Presented at the 2014 WEFTEC Conference, New Orleans, Louisiana.

"Building Financial Resiliency in Challenging Times: Can Be Done With Proactive Stakeholder Engagement". Presented at the 2014 Utility Management Conference, February, Savannah, Georgia.

"User Fee Funded Stormwater Utilities Manual". 2nd Edition. (2013). Lead Author for Chapter 3 – Stormwater Feasibility Study. Water Environment Federation, Alexandria, VA.

"Regional Collaboration: A 2009 Survey Findings". Report on the survey conducted by the Strategic Management Practices Committee of AWWA. Presented at the 2010 Utility Management Conference, February, San Francisco, CA

"Promoting Sustainable Stormwater Management: The Role of a Stormwater Credit Program". Presented at the 2009 Stormcon Conference, August, Anaheim, CA.

"Look Before you Leap: Developing Policies for Stormwater User Fee Implementation," Presented at the August 2008 Stormcon Conference, Orlando, Fl.

Kumar, Prabha, White, Anna. (2008). *"Know Your Way – Policy Development in Stormwater User Fee Implementation,"* Published in the May 2008 issue of Stormwater, Vol 9. No.3.

"Stormwater User Fee Financing: Charge the Runoff, not the Usage," Presented at the 2007 AWWA-WEF Joint Management Conference, Portland, Ore.

Brian L. Merritt, LEED-AP, CFM

Civil/water resources project management professional with 14+ years of experience in the engineering and consulting industry. Extensive experience in project management, stormwater fee implementation and development, engineering design, permitting, public outreach, program evaluations and planning, and funding strategy implementation.

MANAGER

Specialization:
Stormwater Fee and Utility Implementation; Stormwater Management; Strategic Planning; Hydraulics; Hydrology; Green Infrastructure Planning and Design; Credit Program Development; Rate Structure Analysis and Design; Stormwater Financial Planning; Public Outreach and Stakeholder Engagement; Stormwater Needs Assessments;

Education
- M.S., Civil & Environmental Engineering, Lehigh University, 2007
- B.S., Civil & Environmental Engineering, Lehigh University, 2000

Professional Registrations & Certifications
Certified Flood Plain Manager
Leadership in Energy & Environmental Design (LEED) Accredited Person Certified Carbon Strategy Practitioner

Professional Associations
- Pennsylvania Environmental Council

Year Career Started
2002

Year of Stormwater Experience
14

PROJECT EXPERIENCE

City of Columbia, South Carolina| Stormwater Rate Study |2016-2017

Mr. Merritt has been serving as task lead working with the City of Columbia South Carolina's Department of Utilities and Engineering to complete develop a long-term financial plan and associated rate schedules for their stormwater utilities. Prior to the study, the City had not reviewed their stormwater rates in nearly 10 years. Currently, Mr. Merritt is assisting the City in evaluating multiple capital improvement plan scenarios in conjunction with the capital financing plan. Scenarios range from $5 million to $100 million in capital improvements, funded via a mix of cash and debt financing. Varying levels of incremental operating costs associated with the additional staffing needed to deliver the capital program were also incorporated into the analysis. In the spring of 2017, a series of presentations of the financial plan and rate schedules were made to City Council. In June 2017, City Council approved a multi-year rate increase, that will aid the City in addressing critical stormwater issues and address nearly $100 million capital improvements.

City of Cincinnati, Ohio – Stormwater Management Utility | Stormwater Rate Study |2016-2017

Mr. Merritt has been working with the City of Cinncinnati Ohio's Stormwater Management Utility (SMU) to complete a comprehensive review of the their stormwater rates. Current work includes the evaluation of projected revenue requirements and anticipated system-wide revenue increases due to the anticipated need for a large capital program to rehabilitate and/or replace components of the City's Barrier Dam as well as other critical stormwater infrastructure. Additional costs associated with NPDES MS4 Phase II permit requirements, increased operation and maintenance costs, were also evaluated. A draft financial plan report was delivered to staff in January 2017. The report is expected to be finalized in the coming weeks for City Council consideration.

City of Havre de Grace, Maryland | Water and Sewer Rate Rate Study |2016-2017

Mr. Merritt is serving as project manager for the City of Havre de Grace, Maryland's to complete a comprehensive review of their current water and sewer rates. The project integrates an asset renewal forecast with the rate study in order to alleviate the current deficit fiscal position and adequately fund water and sewer operations and capital program obligations. Prepare a reasonable estimate of repair and renewal forecast for all of the water system treatment, storage, transmission, and distribution assets; Development a five-year financial plan for the water/sewer enterprise fund to assure financial self-sufficiency; Review of the existing rate structure and design rate schedules to enable a defensible recovery of fixed and variable costs of the water and sewer utilities; and

presentation of the Rate Study findings and recommendations to the Water and Sewer Rate Commission and to the City Administration and Council.

Philadelphia Water Department, City of Philadelphia, Pennsylvania | Stormwater Cost of Service and Rate Study | 2015-2017

Mr. Merritt is supporting the stormwater cost of service analysis, and rate study update for the Philadelphia Water Department. The study involves a six-year financial planning, cost allocation analysis, stormwater fee policy issues review, rate design, and rate case support. Mr. Merritt is aiding in the development of stormwater related analysis including: sewer cost of service, system-wide billing units estimates, stormwater cost allocation, user fee methodology, credit, incentive and customer assistance program cost recovery. Mr. Merritt is also helping with drafting testimony for the rate proceedings.

Pittsburgh Water and Sewer Authority, Pittsburgh| Stormwater Program and Rate Structure Project | 2015-2017

Mr. Merritt is currently serving as Project Manager for Black & Veatch's portions of the Pittsburgh Water and Sewer Authority's (PWSA) 2 –Stormwater User Fee Development and Implementation project. Phase 2 builds off of work previously conducted in 2012, and is intended to take the decisions and recommendations developed during Phase I- Feasibility Study up to the development of a draft ordinance for consideration by Pittsburgh City Council. Project work will include updates to the stormwater cost allocation analysis, financial planning, user fee funding and rate structure finalization. Mr. Merritt is providing technical advice and input into PWSA's public outreach and education planning efforts.

City of Newark, Delaware | Stormwater Rate Structure Development |2016

Mr. Merritt has been assisting in the development of a new stormwater utility for the City of Newark, De. This involves the evaluation of policies related to stormwater revenue requirements, impervious area development, customer classification, rate structure development, billing and enforcement as well as credit and appeals. Work also includes establishing stormwater units of service and analyzing the operations, capital and other costs to determine the revenue requirements. In addition, a draft stormwater rate structure and fee have been developed. The implementation of stormwater fee has been approved by City Council and is moving into the implementation phase.

City of Cincinnati, Ohio – Stormwater Management Utility | Stormwater Rate Study |2016-2017

Mr. Merritt has been working with the City of Cinncinnati Ohio's Stormwater Management Utility (SMU) to complete a comprehensive review of the their stormwater rates. Current work includes the evaluation of projected revenue requirements and anticipated system-wide revenue increases due to the anticipated need for a large capital program to rehabilitate and/or replace components of the City's Barrier Dam as well as other critical stormwater infrastructure. Additional costs associated with NPDES MS4 Phase II permit requirements, increased operation and maintenance costs, were also evaluated. A draft financial plan report was delivered to staff in September 2016. The report is expected to be finalized by December 2016 for City Council consideration.

Philadelphia Water Department, City of Philadelphia, Pennsylvania | Water Revenue Assistance Programs and Appeals Process Review | 2015

Mr. Merritt is assisting with the implementation of improvement initiatives identified during Black & Veatch's comprehensive program review of the Water Revenue Bureau's (WRB) existing Water Revenue Assistance Program (WRAP), Deferred Payment Agreements program and a review of the utility billing appeals and hearing processes. Work includes policy manual development, training materials preparation and conduct of customer service representative (CSR) training sessions for over 200 City of Philadelphia employees.

South Fayette Township, Allegheny County, Pennsylvania|Stormwater Program Needs Assessment | 2015

Project Manager, while with a former employer, assisting South Fayette Township in a comprehensive needs assessment of their existing stormwater program. The goal of the project is to define an enhanced program that meets the future needs and priorities of the community while addressing operation and maintenance, infrastructure replacement, and MS4 compliance responsibilities. All of the main streams, which run through the Township, are impaired. Impairments include acid mine drainage, nutrients, PCBs, and sediments. Actions to address these pollutants must be considered as part of the next MS4 permit cycle. A stormwater needs assessment committee was conveyed to gain public input into which program areas needed the most attention and to develop a five-year plan on which to evaluate funding options.

White Township, Indiana County, Pennsylvania |Stormwater Assessment Feasibility Study|2014-2015

Project Manager, while with a former employer, assisting White Township in a program evaluation process that could result in the implementation of a stormwater user fee in the Township. This fee would be used to support enhancements to the Township's stormwater management program with resources directed to meet community-wide goals and needs. The project is intended to provide the Township with sufficient information on the viability of implementing a stormwater user fee, prior to investing in full implementation. Responsible for program evaluation and planning, billing system and data evaluation, impervious area data analysis, parcel and account review, rate structure development, initial rate estimates, public/Board of Commissioners presentations as well as overall project and client management. As of June 2015, White Township has decided to move forward with implementation targeting January 2016 for implementation.

Radnor Township, Montgomery County, Pennsylvania | Stormwater Program and Fee Implementation | 2012-2013

Project Manager, while with a former employer, for the evaluation and development of an updated stormwater management program and funding mechanism for Radnor Township, PA. Led project team working with the Township personnel to develop a dedicated funding source to help meet the community's goals for infrastructure maintenance, flood mitigation, and green infrastructure. Services included stormwater program assessment and level of services analysis, financial analysis, data and master account file development, stakeholder meeting facilitation, rate evaluation, rate structure and ordinance development. Radnor convened a stormwater advisory committee to provide input into key policy issues such as the stormwater program needs, level of service considerations, the overall program plan, rate structure, credit and incentive program options and public education requirements. Assisted the Township with appeals policy development, billing

system implementation support, customer service training, draft credit program development, and public education efforts. The stormwater user fee was approved by the Radnor Board of Commissioners in September 2013.

City of Meadville, Crawford County, Pennsylvania | Stormwater Program and Fee Implementation Project | 2012-2013

Project Manager, while with a former employer, for the evaluation and development of an updated stormwater management program for the City of Meadville, PA. Assessed the current stormwater program with the goal of establishing a functioning stormwater funding mechanism that fully accounts for the City's stormwater program costs. Tasks included a review of the City's current level of service, evaluation of the stormwater program's organizational structure, future needs assessment, current cost estimation, facilitation of Citizen's Advisory Groups, ordinance development, credit and appeals policy and program development, customer service training, management of public outreach and education activities as well as GIS and billing database development. Two separate Citizen's Advisory Groups were convened, one to provide input on the initial stormwater fee policies and the second to help develop a detailed stormwater credit and appeals program to enhance the equity of the fee and provide incentivizes to private property owners to better manage stormwater on-site. The Meadville stormwater fee was approved by their City Council in November 2012 and the first bills were processed in 2013.

Mt. Lebanon Township, Allegheny County, Pennsylvania | Stormwater Program and Fee Implementation | 2011-2012

Project Manager, while with a former employer, providing support on all aspects of the stormwater program evaluation and fee development. Mr. Merritt was also responsible for contracting, budgeting, scheduling and invoicing of executed project work. Mt. Lebanon was the first stormwater fee to be implemented within Pennsylvania outside of the City of Philadelphia. The project entailed providing a full suite of services in support of program development and fee implementation including program assessment, cost of service analysis, cash flow analysis, data analysis and rate development, Master Account File development, billing assistance and customer support training, public outreach and education, rate ordinance support. The overall team worked closely with Mt. Lebanon staff and consultants to undertake the steps necessary to implement the stormwater program and associated fee. The Mt. Lebanon stormwater fee was approved by in August of 2011 and the first bills were processed in 2012.

Philadelphia Water Department, City of Philadelphia, Pennsylvania | Credit Program and Customer Advisory Committee | 2010-2012

Project Manager, while with a former employer, for to assist the Philadelphia Water Department (PWD) in assessing its current stormwater fee and credit program and leading staff and citizens through a process that has helped to identify potential changes and improvements in both the perceived equity of its stormwater user fees and the overall effectiveness of its credit mechanisms as they apply PWD's Stormwater and Green Infrastructure (GI) programs. Provided assistance in project efforts including: user fee, rate payer, and credit application analysis and tool development; strategic and tactical planning with staff; complex financial and economic analysis of scenario impacts on various classes of business and residential land use; peer cities review; assessment of various credit approaches tied to GIS objectives, customer attractiveness, and financial impacts; development and facilitation of a multi-meeting Customer Advisory Committee (CAC) / stakeholder process;

development of policy documents, informational pieces, public outreach execution and support, meeting notes and summaries and comprehensive report. Additionally, oversaw the team's scope, schedule and budget, as well as managed contracting obligations, billing and invoicing.

SELECTED PUBLICATIONS & PRESENTATIONS

Presentations – Stormwater Utility Implementation

- Government Finance Officers Association of Pennsylvania, April 2015
- Villanova University Guest Lecturer – Sustainability & Science, 2014
- St Joseph's University Stormwater Workshop, 2014
- Villanova University Stormwater Symposium, 2013
- 3 Rivers Wet Weather, 2013
- Erie County GIS Workshop, 2013
- PA Northwest City Manager's Meeting, 2012

Publications

"Sustainable Stormwater Programs and Financing", Pennsylvania Borough News, October 2014

Pamela Lemoine

Ms. Lemoine's experience encompasses a diverse range of financial, engineering, and economic studies for stormwater, wastewater and water utilities and solid waste systems. She has extensive experience in the conduct of strategic financial planning studies, cost of service and rate design studies, as well as financial capability analyses and affordability assessments associated with long term control plan development required as a result of federal consent decrees and integrated planning efforts. She has assisted utilities in developing strategies to address affordability in negotiations with regulators.

Ms. Lemoine is familiar with the issues affecting stormwater management, including compliance with federal legislation such as the National Pollutant Discharge Elimination System, urban runoff management and private versus public property issues. Ms. Lemoine has helped clients develop policies that help meet both the city's and property owners' needs and has assisted in the development of stormwater utilities, including policy development, financial planning, rate and credit program design, and implementation, providing clients with a stable source of revenue to fund necessary stormwater activities as required by NPDES permits and other wet weather related issues.

Ms. Lemoine has also developed performance measures to allow utilities to better track efficiency and level of achievement of established goals and objectives. She is also experienced in the determination of the economic feasibility of proposed projects or property as well as major expansions to projects. She regularly presents utility issues and study results to city councils, board of commissioners and other stakeholders.

REPRESENTATIVE PROJECT EXPERIENCE

City of Cincinnati, Ohio Stormwater Management Utility | Stormwater Rate Study | 2011, 2016-present

Project Manager. Ms. Lemoine served as Project Manager in the completion of a comprehensive stormwater rate study for the City's Stormwater Management Utility (SMU). The analysis included the evaluation of projected revenue requirements and anticipated system-wide revenue increases due to the anticipated need for a large capital program over the study period to rehabilitate and/or replace components of the City's Barrier Dam, which is operated by the stormwater utility and funded by the stormwater user fee. Rates based upon the analysis were implemented in December 2011. Subsequently, Ms. Lemoine led a comprehensive update of the analysis for the FY2018-2027 study period. Ms. Lemoine continues to assist SMU in the evaluation of alternative budgets being proposed by policy makers.

PRINCIPAL CONSULTANT

Specialization:
Strategic Financial Planning, Affordability, Stormwater Utility Development and User Fees, Capital Projects, Funding and Bond Feasibility, Citizen Work Groups, Public Information

Education
- B.S., General Engineering, University of Illinois – Urbana-Champaign

Professional Registration
Professional Engineer: Washington

Experience
1987 – present

Joined Black & Veatch
1995

Professional Associations
WEF
AWWA
NACWA – Utility Management Committee member, Legal Affairs Committee
USEPA Environmental Financial Advisory Board member

Sanitation District No. 1 of Northern Kentucky | Wastewater and Storm Water Financial Planning and Rate Study and Consent Decree Affordability/Negotiation Assistance, Kentucky | 2012-present

Project Manager. Comprehensive financial plan and rate study for the District. Key issues addressed included the appropriate allocation of wet weather costs between the wastewater and storm water utilities, allocation of costs, including wet weather costs, to customer classes, and review and recommendation of appropriate rate structures to recover such costs in an equitable manner.

Project Manager. Evaluation of affordability concerns related to the District's consent decree and on-going negotiations with federal and state regulators. Issues being addressed include the economic condition and impact of the wet weather program within the service area and specifically for vulnerable populations within the service area, the impact annually and over time on the District's financial condition, and overall impact within the service area due to the combined effect of wastewater and stormwater requirements.

City of Springfield, Ohio | Stormwater Utility Development | 2009-2011

Technical and Policy Advisor. The City engaged Black & Veatch to assist with the implementation of a stormwater utility. Project elements included all activities required for the successful implementation of a utility, including organization and financial analysis, parcel analysis, rate structure and fee development, credit program and appeals process development, development of the draft ordinance, and billing database. All activities were conducted with a strong focus on public involvement, through a citizens' advisory committee and development of a public outreach program. Ms. Lemoine assisted with the development of all policies, parcel analysis and billing database.

Metropolitan Sewer District of Greater Cincinnati | Wastewater Revenue Requirement, Cost of Service and Rate Design Studies and Consent Decree Affordability Analysis/Negotiation Assistance, Ohio | 2005-present

Project Manager. Annual review of the District's revenue requirements, developing a 5-10 year projection of future revenue needs based upon the District's current operating and capital programs. Ms. Lemoine also worked with District Management in 2009 to evaluate financial policies and recommend changes to the policies to help improve the District's financial strength and ensure continued success in light of the significant capital requirements the District is facing.

Project Manager/Director: Biennial comprehensive evaluation of the District's rate schedule, including projection of revenue requirements, cost of service analysis and rate design. Key issues have included: impact of implementation of the District's Wet Weather Program, as required under a consent decree; impact of declining customer volume; changes in rate structure to address

affordability concerns while maintaining equity between customers; and evaluation of the equitable recovery of costs related to infiltration/inflow.

Project Manager. Detailed evaluation of short- and long-term effects of implementation of requirements of the District's consent decree. Evaluated the impact of capital costs as well as associated additional operating costs on the utility's revenue requirements and resulting rates increases. Evaluated affordability based on EPA Guidance as well as annual bills compared to median income for both service area and city. Worked closely with the District and the District's attorneys throughout the negotiation process, including discussions with regulator staff and consultants.

City of Arnold, Missouri | Stormwater Utility Development | 2003-2006

Task Leader and Senior Consultant. Ms. Lemoine served as a Task Leader and Senior Consultant developing the framework and fees necessary for implementing a stormwater utility within the City. The work was completed as part of a larger stormwater master plan project. Her work included the development of alternative sources of funding followed by the development of numerous rate structures that would be feasible for the City to implement. Based on approval by the City Council, rates were developed for three alternative levels of operation for the new utility. Identification of additional data needs, database development and implementation procedures were also included in the study.

Additional Stormwater Experience

- Southeastern Public Service Authority | Strategic Financial Advisory Services, Virginia
- Seattle Public Utilities | Drainage Policy Study, Washington
- Sydney Water Corporation | Survey of United States Stormwater Utilities, Australia
- Portland, Ore. | Stormwater Cost Allocation Study
- Tacoma, Wash. | Storm Drainage Utility Cost Allocation Study
- Portland, Ore. | Capital Cost Allocation Study, Bureau of Environmental Services
- Ocean Shores, Wash. | Water, Wastewater and Storm Drainage Rate Study