EXPRESSION OF INTEREST

STATE OF WEST VIRGINIA
DIVISION OF NATURAL RESOURCES

A/E SERVICES - WATER LINE REPLACEMENT AT VARIOUS STATE PARKS

SOLICITATION NO: CEOI 0310 DNR1900000005

RK&K

February 22, 2019

IMAGES COURTESY OF GOOGLE

159 Plaza Drive | Keyser, WV 26726 | P 304.788.3370 | F 304.788.3577 | www.rkk.com

February 25, 2019

Mr. Guy Nisbet
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, West Virginia 25305-0130

RE: Expression of Interest
Water Line Replacement at Various State Parks
Solicitation Number: CEOI DNR 1900000005

Dear Mr. Nisbet:

Rummel, Klepper & Kahl, LLP (RK&K) provides engineering services to communities across the State of West Virginia and we believe that true service involves more than design and construction oversight. We start each project by helping clients identify infrastructure needs and match them to available funding sources. For the West Virginia Division of Natural Resources' (DNR) Waterline Replacement Projects, our goal is to deliver top-quality projects, completed promptly, in a cost-effective manner, and that meet DNR's long term needs. This formula for success is based on RK&K's broad experience providing engineering design services related to water systems for clients large and small.

From project inception, the RK&K Team will work closely with DNR by utilizing extensive water experience to achieve project goals as together we develop solutions for water line replacements at the various state parks. The enclosed Expression of Interest demonstrates our team's ability to provide to DNR with the appropriate planning and design experience, local resources and scope of services necessary to successfully design and implement these water line replacements in the most efficient and cost-efficient manner. We offer the following qualifications that reinforce why RK&K's team offers strengths that set us apart from other firms submitting on these projects.

- **A Local Multidisciplinary Team.** RK&K has a multidisciplinary local team of 30+ staff members located in our Keyser and Charleston, West Virginia offices to serve DNR on this project.

- **Experienced Project Managers.** RK&K's project managers are well acquainted in management of this type of project, with decades of relevant water utilities design experience along with successfully designing similar water projects. RK&K's management team places great emphasis on identifying cost-effective solutions based on accurate cost estimates.

- **Specialized Subconsultant.** RK&K anticipates providing all work associated with this project; however, Montum Architecture, LLC will serve as a subconsultant to RK&K if the need is determined. Tom Pritts, AIA, owner brings more than 17 years of experience in this field, including several current and successfully delivered projects for DNR.

- **Responsive Service.** Due to the proximity of our two West Virginia offices, the RK&K Team can expedite the response time during the design and construction phases of these project. Providing responsive service is a top priority. DNR can count on RK&K's team to be very accessible.

- **Commitment to DNR.** RK&K will work alongside DNR representatives and utilize a proven, efficient and effective approach to meet the project objectives. RK&K is committed to working with DNR to meet the needs of each project.

- **Ability to Begin Immediately.** RK&K's team can begin work on these projects immediately and has the available resources to meet the DNR's desired schedule. Project success will be the focus of the RK&K Team, providing on-time and on-budget delivery of services.

RK&K appreciates this opportunity to demonstrate our outstanding technical capabilities in providing engineering services, team innovation, and unparalleled project commitment. The RK&K Team is enthusiastic about the opportunity to serve DNR. If you have any questions regarding this Expression of Interest, please contact me at 304.788.3370 or e-mail jcole@rkk.com.

Very truly yours,

Rummel, Klepper & Kahl, LLP

John W. Cole, PE
Manager, Municipal Engineering

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 545312

Doc Description: A/E Services-Water Line Replacement at Various State Parks

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2019-02-01	2019-02-25 13:30:00	CEOI 0310 DNR1900000005	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Rummel, Klepper & Kahl, LLP
159 Plaza Drive
Keyser, WV 26726
Phone: 304.788.3370

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
(304) 558-2596
guy.l.nisbet@wv.gov

Michael W. Myers, PE

Signature X [signature] **FEIN #** 52-0599112 **DATE** 2/8/19

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Expression of Interest Request

The West Virginia Purchasing Division is soliciting Expression(s) of Interest for the Agency, The Division of Natural Resources from qualified firms to provide necessary engineering, and other related professional services to design and specify for construction as well as provide construction contract administration,for the replacement of certain water lines at Babcock, Chief Logan, North Bend, and Watoga State Parks. The planned improvements may also include any other work necessary for, or related to, the aforementioned facilities, as well as any other necessary ancillary work; all located in Logan, Fayette, Ritchie and Pocahontas Counties, West Virginia.

* Online submissions of Expressions of Interest are Prohibited

INVOICE TO	SHIP TO
DIVISION OF NATURAL RESOURCES PARKS & RECREATION-PEM SECTION 324 4TH AVE SOUTH CHARLESTON WV25305 US	STATE OF WEST VIRGINIA JOBSITE - SEE SPECIFICATIONS No City WV 99999 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Civil engineering		

Comm Code	Manufacturer	Specification	Model #
81101500			

Extended Description :

Architectural/engineering services and contract administration for water line replacement at various West Virginia State Parks.Resort State Park.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 545312

Doc Description: A/E Services-Water Line Replacement at Various State Park

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2019-02-08	2019-02-25 13:30:00	CEOI 0310 DNR1900000005	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Rummel, Klepper & Kahl, LLP
159 Plaza Drive
Keyser, WV 26726
Phone: 304.788.3370

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
(304) 558-2596
guy.l.nisbet@wv.gov

Signature X FEIN # 52-0599112 DATE 2/21/19

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.01 issued to add corrected bid opening information as attached that was wrong on initial page 4 of the advertised solicitation.

No other Changes.

****

Expression of Interest Request

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81101500			

Extended Description :

Architectural/engineering services and contract administration for water line replacement at various West Virginia State Parks.Resort State Park.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title)
John W. Cole, PE, Manager, Municipal Engineering
(Printed Name and Title)
159 Plaza Drive, Keyser, WV 26726
(Address)
304.788.3370 / 304.788.3577
(Phone Number) / (Fax Number)
jcole@rkk.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Rummel, Klepper & Kahl, LLP
(Company)

(Authorized Signature) (Representative Name, Title)

Michael W. Myers, PE, Partner
(Printed Name and Title of Authorized Representative)

2/8/19
(Date)

410.728.2900 / 410.728.2834
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: Fasten12

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1	[ ] Addendum No. 6
[ ] Addendum No. 2	[ ] Addendum No. 7
[ ] Addendum No. 3	[ ] Addendum No. 8
[ ] Addendum No. 4	[ ] Addendum No. 9
[ ] Addendum No. 5	[ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Rummel, Klepper & Kahl, LLP
Company

Authorized Signature

John W. Cole, PE
Manager, Municipal Engineering

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of $1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

"Interested party" or *"Interested parties"* means:

(1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
(2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
(3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of W. Va. Code § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: www.ethics.wv.gov.

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Rummel, Klepper & Kahl, LLP **Address:** 159 Plaza Drive, Keyser, WV 26726

Name of Authorized Agent: Michael W. Myers, PE, Partner **Address:** Same

Contract Number: _____ **Contract Description:** Babcock, Chief Logan, North Bend & Watoga State Parks Water Line Replacement

Governmental agency awarding contract: WV Division of Natural Resources

☐ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☐ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☐ Check here if none, otherwise list entity/individual names below.

Signature: Michael W. Myers Date Signed: 2/8/19

Notary Verification

State of Maryland, County of Anne Arundel:

I, Michael W. Myers, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 8th day of February, 2019

Virginia A. Hagg
Notary Public's Signature Exp. 4/7/20

VIRGINIA A. HAGG NOTARY PUBLIC ANNE ARUNDEL COUNTY, MD

To be completed by State Agency:
Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

Revised June 8, 2018

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Rummel, Klepper & Kahl, LLP

Authorized Signature: _____ Date: 2/8/19

State of Maryland

County of Anne Arundel, to-wit:

Taken, subscribed, and sworn to before me this 8th day of February, 2019.

My Commission expires 4/7, 2020.

AFFIX SEAL HERE

VIRGINIA A. HAGE NOTARY PUBLIC ANNE ARUNDEL COUNTY, MD

NOTARY PUBLIC _____

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Introduction

The Executive Summary provides a synopsis of the various components of RK&K's Expression of Interest (EOI) as well as our ability to fulfill the contract requirements to successfully deliver design services and construction contract administration services to the West Virginia Division of Natural Resources (DNR) for the replacement of water lines at Babcock, Chief Logan, North Bend, and Watoga State Parks located in Logan, Fayette, Ritchie and Pocahontas Counties, West Virginia. RK&K's proposed team is committed to deliver engineering solutions that are technically-sound, cost-effective and environmentally compliant.

Statement of Qualifications

Section 2, Statement of Qualifications describes RK&K's expertise (more than 96 years) in providing professional services for the study, design, construction and project delivery for all aspects of water and wastewater utility systems. This industry expertise makes RK&K a reliable partner to fulfill DNR's needs for these projects. Our firm has been involved in numerous studies to evaluate the adequacy and condition of existing facilities, develop and evaluate alternatives for new facilities that best meet current and future needs of client's water and sewer utilities; and identify and recommend the best program for managing the water and sewer systems development and growth in a particular planning area for a specified planning horizon. RK&K also routinely provides preliminary engineering and designs, final design, development of contract documents for new construction, rehabilitation, replacement and construction inspection/administration services for water improvement projects.

Section 2 also describes the **Capacity of the Firm**. RK&K has projects in varying stages of completion and our current workload will have no impact on our ability to provide services to DNR for the successful delivery of these projects. We can fully commit our team and necessary resources to facilitate the successful, timely delivery of professional engineering and related services to DNR. We will provide services from our Keyser, West Virginia with support from our Charleston office as needed. The Keyser and Charleston offices are comprised 30+ dedicated staff available to begin upon notice to proceed. Additionally, RK&K has more than 1,350 engineers, designers, and support staff available firm-wide to support our team.

This Section also describes **RK&K's Related and Past Experience** delivering projects with similar requirements and schedules. Because of our depth of staff, and our familiarity and proven approach delivering similar water line replacement projects, we are confident in our team's ability to meet DNR's needs for these projects Our Experience with the **requirements of state and federal agencies** is also described as well as our Team's **Technical Expertise** related to water systems.

RK&K's West Virginia Certificates of Authorization are included at the end of this section.

Methods of Approach

Section 3, Methods of Approach, describes RK&K's understanding and the various phases of our approach to deliver these projects. It is our understanding DNR is seeking a professional engineering firm to provide necessary engineering and related professional services to design and specify for construction as well as provide construction contract administration, for replacement of water lines in Babcock, Chief Logan, North Bend and Watoga State Parks. We understand the planned improvements may also include any other work necessary for, or related to, the parks facilities, as well as any other necessary ancillary work.

Management and Staffing

Section 4, Management and Staffing describes the qualifications of our project team proposed for this work. We offer a team of professionals who are well versed in the water industry for this project. Our team consists of professional engineers licensed in the State of West Virginia with a sound knowledge of standards and design requirements. As Project Manager, **John Cole, PE** will lead our comprehensive team offering his more than 17 years of diverse experience in the water industry, including water distribution, water treatment plants, pumping stations, and storage, as well as construction management. Mr. Cole will lead a group of highly qualified individuals with vast knowledge and experience who have worked together on prior water system projects.

Mr. Cole will be the point of contact, provide management and technical support, and will ensure adquate resources are available to meet the demands of each project.

Section 4 also includes RK&K's Management Approach and Quality Assurance process. We have also included a detailed organizational chart identifying each key team member and their proposed project assignment. In addition, resumes of key team members are provided. Copies of our team's professional licenses can be found in the Appendix.

RK&K will also utilize the services of **Montum Architecture, LLC** as a subconsultant providing architectural services, if needed. Thomas F. Pritts, AIA, owner, offers his more than 17 years of experience as well as current and past work with DNR.

Experience with Similar Projects

Section 5, Prior Experience, contains RK&K's qualifications, experience and references. RK&K and our local staff are proud of our record of consistently being reselected for new contracts and projects by former clients. The quality of our performance is reflected in the repeat selections, as well our our high ratings and ability to meet project schedules while maintaining reasonable fees. Many of the projects completed are waterline projects and were replaced utilizing innovative methods and is directly applicable to the services for waterline replacements envisioned by DNR.

FIRM OVERVIEW

Founded in 1923, **Rummel, Klepper & Kahl (RK&K)** is a leader in providing the full spectrum of planning, engineering and construction services to water and wastewater agencies and municipalities throughout the mid-Atlantic and Southeastern Regions. Our services include all aspects of water quality and quantity management ranging from water and wastewater treatment plants, wastewater collection and water distribution systems, and pumping stations. Adept at a diverse mix of water system projects, our engineering team possesses expertise in hydraulics, hydrology, infrastructure planning, project management, and construction administration.

Ranked #73 on the 2018 Engineering News Record's listing of Top 500 Design Firms, RK&K serves an array of municipal, state and federal clients from 25 offices, including two in West Virginia – Keyser and Charleston. The firm employs a well-diversified staff of engineers, planners, environmental specialists, surveyors, designers, draftsmen/CAD technicians, GIS specialists, construction managers, inspectors and support staff.

PROFESSIONAL SERVICES

RK&K's services include preliminary engineering studies/reports, environmental and qualifying reviews, surveys, preparation of funding applications, final design, preparation of bidding and contract documents, participation in the evaluation of construction bids and construction management and inspection services.

In-House Services	
Water/Wastewater	**GIS, Survey & Mapping**
Water Resources	Geotechnical Engineering
Civil/Site Development	Natural & Cultural Resources
Transportation Planning & Engineering	Natural Gas, Petroleum & Pipeline Engineering
Traffic Engineering	Value Engineering
Structural Engineering	Landscape Architecture
Environmental Services & Permitting	Construction Management & Inspection

CAPACITY OF THE FIRM

Services for the Water Line Replacement project will be offered from RK&K's West Virginia offices located in Keyser and Charleston, which includes 30+ dedicated staff. When additional specialty resources are needed, manpower of 1,350+ engineers, designers, technicians and support staff will be utilized to support the work.

RELATED PRIOR EXPERIENCE

RK&K is knowledgeable of each project area's local conditions, and is well versed on West Virginia codes, ordinances, and regulations for water system design projects. **Section 5** of this submission provides profile sheets depicting RK&K's relevant experience.

RK&K has an abundance of experience in providing engineering services for water system improvement projects for small county and local governments, including municipalities who might not have the benefit of an engineering staff. RK&K's vast experience in all aspects of water system design has included completion of studies for new systems; evaluation of existing facilities; recommendation of improvements; preparation of preliminary engineering reports and funding applications; assistance to the client in securing funding for a project; design and preparation of plans and specifications; and assistance to the client in bidding and award of a contract. Further, RK&K has provided construction engineering and inspection services during construction, including assistance to clients in project closeout.

TECHNICAL EXPERTISE

RK&K has an abundance of experience in providing engineering services for water system projects.

RK&K's environmental/sanitary engineering experience covers planning, design and construction management for all aspects of wastewater systems. The firm has achieved great success in water/sanitary and environmental engineering, placing numerous wastewater projects into successful operation. RK&K has been involved in numerous studies to evaluate the adequacy of existing facilities and to develop and evaluate alternatives for new facilities that best meet the current and future needs of clients.

Water System Evaluation/Studies

RK&K provides strategic planning services to clients to assist them in providing services to their customers. The scope of these services has literally ranged from "source to tap" and has included evaluation of raw water supplies, evaluation of raw water intake and pumping facilities, evaluation of treatment processes, evaluation of finished water pumping alternatives, and evaluation of distribution system and storage requirements. These studies often have evaluated the condition and adequacy of existing facilities to meet clients' needs, both in the short term and the long term. Pilot testing and computer modeling have been used in many projects to best evaluate a variety of conditions. Additional services provided have included treatment system troubleshooting, water chemistry analysis and operator training.

Hydraulic Modeling

The RK&K Team has extensive experience in hydraulic modeling of water distribution systems which is a key tool in water system planning, analyses, and design. RK&K uses various software packages such as Bentley WaterCAD (Haestad Methods Solution Center) by Bentley Systems to perform computer simulations and hydraulic modeling of water systems for both normal usage and fire demand conditions. Our team understands all aspects of water systems including transmissions mains, pumping stations, rehabilitation of mains and pumping stations, storage analyses, water quality and field testing. Our field testing experience includes flow monitoring, pressure monitoring, water meter calibration, C-value testing, fire flow testing and pump testing. RK&K can provide hydraulic model creation, evaluations, and upgrades to investigate hydraulic capacity, rehabilitation alternatives, fire flow availability, storage analyses, future predictions, water quality issues, operational improvements and emergency scenarios.

RK&K's experience ranges from working with systems such as the City of Charles Town and Wiley Ford, WV to very large systems such as Baltimore's Central System which has a service area of over 300 square miles. RK&K has provided water distribution system analysis services for Frankfort Public Service District, Mineral County, West Virginia; New Creek Water Association, New Creek, West Virginia; City of Keyser, West Virginia; City of Danville; Thomas Jefferson Foundation; City of Baltimore, Maryland; Baltimore County, Maryland; Washington Suburban Sanitary Commission, Maryland; and other municipalities and authorities throughout Maryland, West Virginia, Virginia and Pennsylvania.

Water Transmission Mains

RK&K's specialized experience in water distribution and transmission spans nearly a half century during which time numerous projects have been planned, designed, and placed into successful operation. RK&K's specific experience relative to the study and design water transmission mains include:

- Provision of varied pipeline alignment studies and designs for small (<30" diameter) and large (>30"diameter) water transmission mains; complete municipal distribution systems (4 12" diameter); and utility relocations performed in conjunction with major highway, rail, pier facility, and urban renewal projects.
- Study and/or design of water mains up to 108 inches, working pressures in the range of 50 to 250 psi, and lengths from 1,000 to 50,000 linear feet.

New Creek Water Association

- Use of such construction materials, including pre-stressed concrete cylinder pipe (PCCP), steel pipe, ductile iron pipe (DIP), reinforced concrete pipe (RCP), polyvinyl chloride (PVC) pipe and high-density polyethylene (HDPE) pipe.
- Familiarity with various pipeline environments including conventional trenches with pile, bent, cradle, or indigenous material foundations; subaqueous crossings; bridge suspensions; tunnels; construction within agency and railroad rights of way; and construction in contaminated areas.
- Familiarity with design of new and/or relocated water mains through both newly developed and redeveloped areas in the mid-Atlantic region.
- Experienced in the application of hydraulic network analysis computer modeling including WATERCAD and CYBERNET. Ability to analyze and model dynamic mode and extended period simulation water distribution system hydraulics.
- Experienced in the design of pipe thrust restraint methods including pipe restrained joint systems, concrete buttress and blocking and combinations of these methods. Familiarity with issues of water main service continuity and problems with pressure pipe harnessing/buttresses in areas of proximate active excavation.
- Use of corrosion control methods for water mains, force mains, and gas mains including adjustable impressed current and passive sacrificial anode cathodic protection systems as well as polyethylene wrap protection and multi layered pipeline coating system.
- Successful performance of public relations and community outreach programs.
- Experience with construction phase engineering and resident inspection services during construction of water mains ranging up to 96 inches in diameter.

Water Storage Facilities

RK&K's specialized experience with water storage facilities includes the design of elevated steel and ground level storage facilities, the design of pre-stressed precast concrete storage facilities, the rehabilitation design of reinforced concrete storage facilities, and the design of foundations required to support these facilities. The sizes have ranged from 0.1- to 29.0 MG. Summary of several tanks follows this paragraph. A number of these storage facilities have required that specific consideration be given to siting aesthetics because of their proximity to residential areas and special construction measures due to archeological and historical concerns. Capacities of many of these facilities have been confirmed by computer modeling.

Frankfort Public Service District Water Project

Water Pumping Facilities

Charles Town Water Treatment Plant

RK&K's experience in water pumping facility design has included horizontal split case pumping facilities of single and double stage design with side and bottom suction configuration ranging up to 100 mgd in capacity, vertical turbine pumping facilities with both deep and short column settings, enclosed tube and open shaft design, above and below floor discharge, and multiple stages ranging up to nearly 50 mgd in capacity; vertical turbine booster pumps in enclosed "can" configurations with an aggregate station capacity of up to approximately 5 mgd; and submersible well pumps in various configurations. These facilities have been designed for constant speed units of varying stepped capacities and for variable speed units of identical size. Controls have included local manual on/off, telemetered remote manual on/off, and automatic on/off in response to ambient system pressures and/or elevated tank levels, with

emergency pump off override controls in response to low suction pressure, high discharge pressure, high bearing temperature or vibration level, motor over current, and other salient parameters. Water hammer transients have been managed and attenuated through delayed opening/closure, cone or pump check valves, surge tanks, pressure relief valves, or combinations of these devices.

Charles Town Water Treatment Plant

Water Treatment Plants

RK&K's water treatment plant experience has included the evaluation and design of new facilities as well as the rehabilitation, upgrade and expansion of existing treatment facilities ranging in size from small package plants to the 318 mgd Montebello Filtration Plant in Baltimore, Maryland. We have provided planning, regulatory analyses, vulnerability analysis, water quality analysis, design services, bid document preparation, cost estimating, permitting and funding assistance, troubleshooting, and/or operational assistance for numerous types of water treatment processes including:

- Disinfection systems including chlorine, chloramines, on site hypochlorite generation, ozonation, U.V. disinfection, and contact basins
- Coagulation/Flocculation/Sedimentation (including "high rate" processes such as plate settlers and solids contact units)
- Dissolved air flotation
- Filtration systems including mono media, dual media, and multi-media filters and including buildings, structures, media, backwash systems, filter controls, piping, valving and miscellaneous appurtenances
- Ozone/Biofiltration including ozone contactors, generation equipment and destruction equipment
- Activated carbon for taste and odor control
- pH adjustment and corrosion control technologies
- Chemical feed systems (primary coagulants, polymers, oxidants, fluoride)
- Residuals processing and disposal
- Laboratory facilities
- Storage, pumping, and conveyance systems
- Miscellaneous electrical, SCADA and HVAC systems

Well Development

RK&K has provided study, design and construction services for many projects throughout the eastern panhandle of West Virginia in the development of ground source water wells for use in public water supply. In addition to the well development, these projects included treatment and disinfection prior to distribution.

RK&K's standard approach in the development of a well is to consult with a hydrogeologist knowledgeable in the area of the proposed well. Development of these wells have ranged from a minimum of 80-gpm to over 100-gpm.

Frankfort Public Service District

Water Quality Modeling and Regulatory Guidance

RK&K has assisted numerous clients navigate the morass of drinking water regulations since the Safe Drinking Water Act (SDWA) was enacted in 1974. More recently, the SDWA amendments of 1986 and the 1996 SDWA reauthorization has resulted in numerous rules, regulations and guidance documents. Key regulations include:

- Surface Water Treatment Rule (SWTR)
- Total Coliform Rule (TCR)
- Lead and Copper Rule (LCR)
- Consumer Confidence Rule
- Interim and Long-Term 2 Enhanced Surface Water Treatment Rule
- Stage 1 and 2 Disinfectants/Disinfection Byproducts Rule
- Backwash Recycling Rule

Water quality modeling has become a very valuable tool to assist systems in their compliance with water quality regulations. RK&K has extensive experience in water quality modeling and source trace analyses for small and large systems. However, understanding the regularity requirements goes hand-in-hand with water quality modeling. Most recently, RK&K performed water quality modeling to the Baltimore Water System related to compliance with the Stage 2 D/DBP rule. Services for this system included regulatory compliance evaluations; water treatment plant baseline investigations; comprehensive performance evaluations; and regulatory training.

GIS/SCADA – Model Interfacing

RK&K has extensive knowledge and experience with GIS, Database and CAD system environments, including: Autodesk AutoCAD Map 2010; ESRI ARC/INFO and ArcView; Bentley GeoGraphics; and MapInfo. This knowledge and experience become invaluable during the planning stages of a GIS project, as it enables us to view the execution of the project through the strengths and limitations within multiple GIS/Database/CAD environments. This allows us to choose and tailor a GIS production environment to best meet the needs and challenges of a project.

RK&K has considerable knowledge and experience in the development and use of interfaces between applications. Our lead system analyst, **James F. Ridenour, Jr., PE** has more than 27 years of experience developing, interfacing and extending the functionality of engineering, mapping, database, CAD and GIS applications. Over this timeframe, Jim and his staff have developed applications and utilities for a variety of engineering disciplines, including: hydraulics and hydrology; transportation; surveying; right-of-way; geotechnical; construction; bridge; and structures, with much of this development effort focused in the integration of two or more applications, enabling a more manageable information exchange between the applications.

SUPPORT SERVICES FOR WATER SYSTEM FACILITIES

Structural Engineering

Charles Town Water Treatment Plant

RK&K's structural engineering resources offer experienced engineers capable of providing the services required for this project. RK&K's structural engineering staff is well qualified in performing all phases of work, commencing with concept and feasibility studies through final design and construction phase services. With an extensive background in municipal and transportation facility projects, examples of structural services which have been performed by RK&K engineers include well houses, treatment plants, pumping stations, storage tanks, utility tunnels and vaults, retaining walls, vehicular tunnels, drainage structures, bridges, noise

barriers, sign structures, maintenance shops, operations facilities, administration buildings, truck wash facilities, fuel handling facilities, chemical storage facilities and tourism welcome centers.

Mechanical Engineering

RK&K's mechanical design experience includes HVAC, dehumidification, piping, flow monitoring and valving systems for water and wastewater treatment plants and pumping stations; compressed air and odor control systems for treatment plants and pumping stations; and plumbing systems for various facilities. Automatic temperature and ventilation controls are designed in accordance with accepted code requirements for air change frequency, and to maintain the comfort of operations and maintenance personnel. All mechanical equipment requirements are carefully accounted for when interfacing with the main facility control systems.

Electrical Engineering

RK&K has the in-house capabilities to design all types of electrical power distribution and control systems for municipal, industrial and transportation type construction contracts. We have provided complete design and construction phase services for various types of facilities throughout the mid-Atlantic region. These facilities include water and wastewater treatment plants, pumping stations, well houses, natural gas regulating stations, roadway lighting systems, mass transit facilities and several specialized military facilities.

Designs have included low and medium voltage switchgear, complete power distribution systems, motor control centers, pump controls, HVAC controls, standby emergency power generator systems, SCADA systems and lighting systems of all types. RK&K utilizes the latest in computer aided design tools for power and lighting systems.

Geotechnical Services

The RK&K geotechnical engineering department has been involved in the field investigations, analyses, and geotechnical report preparation for various municipal engineering facilities in excess of 30 years. During this period, numerous treatment plants, pumping stations, solid waste disposal facilities, earth and rock fill dams, levees, floodwalls, lagoons, water supply wells and water supply reservoir projects have been investigated and final designs prepared. In addition, remedial measures and upgrades of existing facilities have been analyzed and geotechnical input provided for final design. For these projects, test borings and observation wells have established soil, rock, and groundwater conditions at the site which, when used in conjunction with laboratory test results where required, has resulted in the most practical foundation system or rehabilitation measures for the project.

Instrumentation/Control and SCADA Systems

RK&K has extensive experience in the evaluation and design of instrumentation and control systems of all types. RK&K has designed numerous water pumping facilities based on level control and pressure control for single and multi- pump applications ranging from a few horsepower to several hundred horsepower. Control systems utilized have included pre-engineered relay-based systems, custom designed relay-based systems, pre-engineered digital control systems, and custom designed systems using programmable logic controllers (PLCs). In each case, control systems have been integrated with the necessary alarm, telemetry and SCADA functions required for the application. Many of the systems designed have included the use of variable frequency drives to control pump speed, including customized multi step speed controls to limit piping fluid velocities under specific operating conditions. In most cases, RK&K's designs have included some level of back up control, ranging from redundant level/pressure sensing equipment, to full back up secondary controls providing automatic operating in the event of primary control failure. Other functions implemented in the design of pump control systems have been automatic valve timing/sequencing, seal water systems, automatic pump alternation, pump lockout circuitry, motor thermal monitoring and vibration monitoring. RK&K's involvement in the design of pumping control systems is often extended into the construction phase of a project, where troubleshooting and start up services have been provided to aid in the implementation of the design.

Operation and Maintenance and Start-up Services

RK&K's experience with operation and maintenance associated with water, wastewater and stormwater facilities includes a wide range of capabilities and services. These consist of training of client staff and operators; preparation of detailed O&M manuals and standard operating procedures; plant evaluation, performance testing, and troubleshooting; and facility startup. RK&K is an innovator in the design and delivery of customized training programs for O&M personnel, many of which are often developed to address client specific concerns for facilities already in operation. RK&K has developed comprehensive SOPs, standard maintenance procedures, operator pocket guides, emergency response plans, operating placards, and other information for plant personnel. In addition, our team provides recommendations to improve plant performance, energy and chemical system optimization, structural integrity and design life and equipment operation and reliability.

Regarding inventory management and control for municipal water, wastewater and stormwater facilities, RK&K often institutes as part of the O&M manual or standard operating procedures, a facility specific protocol for managing spare parts inventories, lubricants and equipment specific tools. These protocols are usually developed in conjunction with the client's operation and maintenance staff and can range from a three-ring binder containing the inventory listing, parts, identification numbers, and vendor codes to a complete computer database installed on a networked hardware system with terminals accessible at various system facilities.

ENGINEERING SUPPORT SERVICES

Permitting

RK&K has extensive experience and close working relationships with numerous federal and state environmental agencies to obtain required permits. Through recent experience on projects for municipalities, RK&K's Team has developed a close working relationship with the WV Bureau of Health, WV Department of Environmental Protection; WV Department of Natural Resources Office of Land and Streams; WV State Historic Preservation Office; as well as US Fish and Wildlife and Army Corps of Engineers.

Environmental Assessments

The RK&K Team includes individuals experienced in identifying jurisdictional waters of the U.S., including the vegetation, soils and hydrology for wetland delineations. Several key and support staff members are U.S. Army Corps of Engineers' (COE) certified wetland delineators and/or professional wetland scientists. RK&K can assess functions and values of affected wetlands using techniques such as the Hollands Magee method, Soil Conservation Service Method, Hydrogeomorphic Classification method (HGM) Rapid Assessment Procedure (Magee Hollands Method) or other accepted methods.

RK&K has conducted several hundred wetland delineations and numerous functional assessments. Wetland delineations are performed in accordance with the 1987 COE Manual and have been approved by, and jurisdictional determinations have been obtained from various COE districts, including Baltimore and Norfolk.

RK&K includes professionals skilled in delineating and documenting stream conditions (physical and biological), submerged aquatic vegetation habitat and water quality conditions. RK&K has experience using a variety of methodologies for characterizing stream conditions including Rosgen Stream Classification, U.S.D.A.'s Stream Visual Assessment Protocol and EPA's Rapid Bioassessment Protocols.

Our team also has extensive experience in preparing ecological technical reports which include biological assessments prepared in compliance with the Endangered Species Act.

Construction Management/Inspection Services

RK&K's Construction Management and Inspections Department has been providing construction phase services for over 50 years involving hundreds of public works' projects with aggregate construction costs in the billions of dollars. Projects include water and sewer infrastructure, water and wastewater treatment plants, pumping stations, stormwater management, roadways, bridges, transit tunnels, subways, hydroelectric plants, marine facilities, and flood control facilities plus a variety of building projects.

Many projects involve a full range of construction management/administration and inspection services from design, preconstruction, construction and post-construction phase, including materials testing, tests and start-up, claims resolution, CPM scheduling and contract close-out. RK&K's construction engineering and inspection services involve public works, capital improvements, transportation and/or development projects.

RK&K employs hundreds of construction engineering/inspection personnel of varying levels of expertise. RK&K's employees are knowledgeable about traditional as well as state-of-the art construction inspection practices and procedures and materials testing techniques. Many of RK&K's staff are NICET-certified, Troxler nuclear gauge trained, hold state erosion and sediment control certifications, are certified or approved by client's materials laboratories, and have solid backgrounds and expertise in field surveying and construction layout.

Cost Estimations

RK&K's cost control plan focuses on both internal cost and assignment schedule as well as the construction cost of the facilities being designed. RK&K maintains a monthly routine of monitoring and updating project costs. RK&K's in-house accounting system provides timely reports so that project/task managers know where they are from a budget standpoint on a real-time basis. As a quality management technique, RK&K prepares construction cost estimates by hand in addition to using an automated cost estimating system. The owner is notified immediately when a condition/circumstance exists that affects the budget of the project. This approach has proven very effective with construction bids consistently within 5% of the cost estimate for contracts for $1,000,000 or less and within 3% for contracts greater than $5,000,000. Construction change orders have been consistently within 2% of construction cost.

WEST VIRGINIA CERTIFICATES OF AUTHORIZATION

State Board of Registration for Professional Engineers

A copy of RK&K's Certificate of Authorization from the State Board of Registration for Professional Engineers is included on the following page.

West Virginia Board of Professional Surveyors

A copy of RK&K's Certificate of Authorization from the West Virginia Board of Professional Surveyors is included on page 10.

CERTIFICATE OF *Authorization*

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

The West Virginia State Board of Registration for Professional Engineers having verified the person in responsible charge is registered in West Virginia as a professional engineer for the noted firm, hereby certifies

RK&K ENGINEERS, LLP
C01505-00

Engineer in Responsible Charge: MICHAEL W MYERS - WV PE 018055
has complied with section §30-13-17 of the West Virginia Code governing the issuance of a Certificate of Authorization. The Board hereby notifies you of its certification with issuance of this Certification of Authorization for the period of:

January 1, 2018 - December 31, 2019

providing for the practice of engineering services in the State of West Virginia.

IF YOU ARE REQUIRED TO REGISTER WITH THE SECRETARY OF STATE'S OFFICE, PLEASE SUBMIT THIS CERTIFICATE WITH YOUR APPLICATION.

IN TESTIMONY WHEREOF, THE WEST VIRGINIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS HAS ISSUED THIS COA UNDER ITS SEAL, AND SIGNED BY THE PRESIDENT OF SAID BOARD.

BOARD PRESIDENT

WEST VIRGINIA BOARD OF PROFESSIONAL SURVEYORS

Certificate of Authorization

Rummel, Klepper & Kahl, LLP

Keyser, West Virginia

CERTIFICATE OF AUTHORIZATION # 19-5554

This certificate is issued by the West Virginia Board of Professional Surveyors in accordance with *W.Va. Code §30-13A-20*
The person or organization identified on this certificate is licensed to conduct professional surveying and mapping services in the State of West Virginia for the period

January 1, 2019 through December 31, 2019

This certificate is not transferrable and must be displayed at the office location for which issued.

In witness whereof, I have put my hand, this 31st day of December 2018

2019

R. Michael Shepp, P.S., Chairman
James T. Rayburn, P.S., Member

Sefton R. Stewart, P.S., Secretary
Gary D. Facemyer, P.E, P.S., Member

Douglas C. McElwee, *Esq.*, Public Member

PROJECT UNDERSTANDING

It is our understanding DNR is seeking a professional engineering firm to provide engineering and related professional services to design and specify for construction as well as provide construction contract administration for replacements of water lines at Babcock Chief Logan, North Bend and Watoga State Parks. Below is our understanding of the four projects after meeting with representatives at the respective parks (**Clinton Cochran**, Superintendent, Babcock State Park; **Mike Ward**, Assistant Park Superintendent, Chief Logan State Park; **Steve Jones**, Superintendent, North Bend State Park; and **Jody Spencer**, Superintendent, Watoga State Park).

Babcock State Park

We understand the critical issue with the existing water system at Babcock is a long run (approximately ¾ mile) of old, deteriorating asbestos cement 4-inch water line that needs to be replaced. The recommendation is to replace the existing main in place if feasible. This will mitigate any rock excavation that would be necessary, as the existing ditch could be re-excavated and reused. The existing pipe alignment will still necessitate three road crossings and the pavement is in nearly new condition, so horizontal bore and jack road crossings would be the preferred solution.

Chief Logan State Park

The existing water system at Chief Logan State Park is within the service area of the Logan County PSD, almost entirely within the Crawley Creek Water System. This system was constructed in 2000 and purchases water from the Chapmanville Water and Sewer Board. Water is stored in a tank above the State Park Lodge for additional pressure and capacity for that facility. There are several thousand feet of waterline within the park boundaries and most are experiencing deterioration and water loss.

North Bend State Park

For North Bend State Park, we understand that the lower park water distribution system is around 20 years old and that a segment of the main adjacent to Hughes River was replaced in 2017. It is estimated that most of the ancillary distribution systems are original and probably installed in the 1960s and early 1970s and the elevation and pressure differentials across the entire connected system are such that most laterals have pressure reducers installed very near the main line.

The existing main system is composed of a storage tank to the south of the park, adjacent to Ten Acre Trail. The main extends north, crossing Low Gap Run and Hobbs Cemetery Trail where a lateral takes water to the main lodge area. The main extends northeast through the campground and swimming pool areas and to a lift station adjacent to the North Fork of Hughes River where it terminates at a lateral serving the River Run Campground and Check-in Station. We understand that DNR would like to pick up the main at this terminus and extend service up the hill to the Cabin area next to the Overlook Trail and a fire hydrant in this upper cabin loop area is highly desirable and would improve public safety at the park considerably.

Watoga State Park

Watoga State Park is the largest park in the West Virginia State Parks system and contains five separate water systems that are supplied by wells on the park property. In most cases, water is pumped from wells to higher elevation underground storage vaults and distributed through each system and the majority of well pumps were replaced within the past two years.

Bush Place System: Bush Place is the largest water system in the park and has the most significant issues. Bush Park System is supplied by a well house in the picnic area that supplies water to the Park Office, the cabin areas, and the park's swimming pool. Significant

water loss throughout the system is an ongoing problem and the source is particularly high in pH, making the swimming pool difficult to maintain.

Beaver Creek System: The Beaver Creek source is a small spring box. There is no power at the well and the water is moved by a gravity pump to the Beaver Creek Campground area. It is estimated that this system loses 8,000-9,000 gallons of water per night.

Pine Run System: The Pine Run Cabin Area has its own system, but it is isolated and very small. There has been some discussion of studying the potential of connecting it to the larger, adjacent Bush Place system to improve reliability.

Island Lick System: The Island Lick water system is roughly the same age as the other park systems but is the best functioning.

Riverside Campground: The system serving the Riverside Campground is complex but in good functional shape. There are two wells which alternate to supply the campsites and bathhouse areas and the treatment system makes use of an older Culligan purifier that is difficult to maintain and keep in good working order.

Beaver Creek System

Riverside Campground System

Watoga State Park contains seven to eight miles of galvanized water line. The maintenance records identify and prioritize trouble areas, and indicate the overall needs include analyzing the potential efficiency or ease of use and maintenance that could be achieved by combining and connecting the separate water systems where necessary. There is also a park wide shortage of strategically placed shut-off valves and very often entire systems must be shut down to perform light maintenance.

COMMUNICATION PROCEDURES

At RK&K, we believe proactive communication with your staff is as important as interdepartmental coordination within our firm. For this reason, our team will collaboratively work with representatives from DNR deliver a cost-effective, detailed design for each water line projects that fits the specific needs of the specific park. We offer DNR an integrated project approach that begins with working closely with your representatives to comprehend a full understanding and the project goals. This interactive and collaborative process will be led by our Project Manager, **John Cole, PE.** From project initiation to project closeout, he will serve as the main contact, make sure that consensus is reached at each phase and that the design solutions developed are responsive to DNR's goals and project needs.

Mr. Cole will maintain communication with DNR's representatives at the onset of each project continuing through construction and post-construction services. He will be responsible of the management of the Project Team and make sure all team members involved have a clear understanding of your project scope, the intent of your overall project goals and the appropriate design criteria and environmental concerns to make certain our services exceed the DNR's expectations. Furthermore, he will clearly communicate the scope, schedule and budget to make sure that we deliver the projects in a cost-effective and timely manner. Mr. Cole, along with members of our team, will communicate regularly with DNR during construction to ascertain that existing systems are kept in operation while the new infrastructure is being constructed. Our on-site team members will communicate with RK&K's engineers and with the Park's operators responding rapidly to DNR's requests and project needs.

MAINTAINING PROJECT BUDGET

RK&K maintains an excellent record of managing design budgets, accurately estimating project construction costs, and managing project construction resulting in a minimal number of change orders and cumulative change order values below industry averages. Primarily

two of the best methods we have used to control scope are open communication and keeping current on the project budget. We realize that effective and reliable communication keeps the project's scope understood by all stakeholders as the project progresses. The other step in controlling scope is our cost control plan that focuses on both our internal cost and assignment schedule and the construction cost of the project being designed. In this atmosphere of budgetary constraints, nobody likes surprises. Therefore, we maintain a monthly routine of monitoring and updating project costs. Our management information system provides timely reports, so project managers know where they are from a budget standpoint on real-time basis. Our Project Manager, John Cole, will carefully monitor budgets on a weekly basis using RK&K's management information system (Deltek Vision). Deltek Vision allows staff to monitor progress vs. budget and to identify problem areas early—allowing early action to be taken, if necessary, to make sure the project stays on schedule and budget. The contract budget will include a set percentage for contingency to address unexpected costs such as delays due to weather, material delivery, or contractor performance.

Quality control is a crucial component to maintaining a project budget. Mr. Cole will make sure that project tasks are progressing on schedule and budget. He will also be responsible for ensuring our team is performing the appropriate quality control checks and will assign key staff leaders to review deliverables to identify issues early and verify proper adjustments are made. He will also keep close attention to contractor shop drawings during the construction, and closely monitor costs of proposed materials.

MAINTAINTING PROJECT SCHEDULE

The project schedule, with concurrence of DNR, will be set during the planning stage. Attention will be given to defining critical issues and any project constraints, developing a completion schedule, and including key milestones. The schedule will be in the form of a Gantt Chart showing work components planned by task, through the duration of the project. The schedule will be compressed where possible to meet key milestones and schedule constraints. We will account for schedule delays, including inclement weather, delivery of equipment, and manpower in the project plan. Contract plans, and specifications will be produced to account for these delays to assist in ensuring timely completion of construction. RK&K has a past record of developing project plans and specifications promptly. While RK&K is capable of a fast-paced turn around, the team will make certain that quality and accuracy is considered when establishing the schedule.

The construction will be monitored by onsite resident project representative who will work alongside the contractor's personnel throughout the project. The resident project representative will be in constant contact with RK&K's project engineer to alert to any potential delays so that actions may be taken to offset any delay before the project schedule is affected. Regular meetings and communication will be held with the Contractor and Owner to make sure that all parties adhere to the project schedule.

Based on the current and projected workloads of our team, we can fully commit all necessary resources to facilitate the successful, timely delivery of design and construction services for these water line replacement projects. RK&K's resources, including staff and equipment at other offices, are at the disposal of our project team. Because of our depth of staff, and our familiarity and proven approach to delivering professional services for similar projects, we are confident in our ability to deliver these projects on time and within schedule.

PERFORMANCE DATA

One of the primary reasons we staff a project the way we do is to populate the project team with readily available and qualified personnel. This team is no exception – each person was chosen based on their experience and performance providing services on similar water line replacement projects. Our team is comprised of engineers, CAD designers, surveyors, and resident project representatives ready to begin work immediately and capable of performing the tasks required to meet DNR's goals and objectives. We have organized our team to ensure that we have the staff and resources to facilitate the successful, timely delivery of engineering services for successful projects. RK&K's resources, including staff and equipment are at the disposal of our project team as schedules and assignment workloads require. Our success is achieved by implementing a proven staff and work plan which focuses on: effective project management to achieve DNR's objectives and rapid responses—including proactive management of costs; providing a skillful team with the requisite expertise to provide the services requested; clearly understanding the work to be performed and the expected outcomes; establishing and implementing robust QC/QA protocols; and optimizing the allocation of resources to meet schedules.

PROJECT GOALS AND OBJECTIVES

We have assembled a team from our Keyser office to be responsive to each item within the scope of work involved with these projects. As such, our team is equipped to work concurrently to deliver high-quality projects, on-time, and within budget. Each team member is ready to begin immediately and will work objectively to create a desirable end result for each project that truly incorporates DNR's vision and goals. Our proposed team is known for its technical know-how and over the top personal service.

Goal/Objective 1: Review of Existing Plans and Conditions

The RK&K Team will begin each project by gathering all available information on the water system at each location. RK&K acknowledges that effective communication is the key to success. Meetings will be conducted at the park facility for discussion and with DNR representatives to determine a plan that can be applied with minimal disruption to the park, staff, guests and operation of the facility, while meeting the intention of the project.

Goal/Objective 2: Design Services

RK&K will provide all necessary services for the individual project designs. Construction plans and specifications will be developed in accordance with current federal and state laws and codes, and will be combined with the bidding and contract documents necessary to advertise the project for bid. During the design process, the RK&K Team will continue to meet frequently with DNR's representatives to review progress and receive input.

Budget and Schedule Control: RK&K has an exceptional record of completing projects on time and within budget. RK&K's in-house cost accounting system is capable of segregating and identifying accumulated costs for this project. We will utilize this system to make sure that the project is designed and executed within budget.

Quality Assurance/Quality Control: RK&K's in-house quality assurance/quality control program will also be utilized to make sure that all documents are complete, accurate, and concise.

Goal/Objective 3: Construction Contract Administration Services

RK&K will provide the necessary contract administration services to make sure that the project is constructed in compliance with plans and specifications. Project Manager, Mr. Cole, will serve as the communication link between DNR and the contractor. He will conduct monthly progress meetings with the contractor and DNR to review progress and to resolve any problems that may arise. At the completion of each project, he will conduct a walk-through inspection with DNR's representatives and the contractor, prepare a punch list of items needed to be completed and conduct a final inspection after work is complete. He, along with our team members, will provide technical assistance during the one-year warranty period to resolve any problems that may occur.

With concurrence from the DNR, RK&K will provide full-time inspection on the project. RK&K employees are knowledgeable about traditional as well as state-of-the-art-construction inspection practices/procedures and materials testing techniques. DNR will be provided the opportunity to approve the inspector recommended by RK&K for the work. The inspector will provide assurances that the project is completed in accordance with the plans and specifications.

ANTICIPATED CONCEPTS AND METHODS

Typical Approach

RK&K's project approach has been utilized successfully on past water system projects. Tasks will be performed by experienced professionals who have sufficient experience related to the services required. All work will be done in accordance with applicable federal, state and local regulations, including funding agencies involved in each project. The following details RK&K's typical project approach for water system projects. This approach will be revised as needed to follow the requirements of the DNR.

System Study

RK&K will begin by gathering all available information on the DNR's water system at each park, such as reviewing relevant existing plans. RK&K will follow the reviews by meeting with the DNR's operators, managers and others to obtain information.

After the initial discussion and reviews are completed, we will meet with DNR's representatives to present findings and preliminary recommendations for the project. In addition to presenting the results of the study, RK&K will solicit input from DNR at this or subsequent meetings. These meetings are essential to everyone's understanding of the system's needs and the resultant proposed project. These meetings also serve to reduce or eliminate future misunderstanding of the work to be completed.

Engineering Report

RK&K will proceed with development of a Preliminary Engineering Report (PER). This report is the first requirement in developing a water project to delineate project details. The report will include project description, and project cost estimates necessary to present the project to the DNR. Upon completion of the PER, RK&K will submit to DNR for review and approval.

Construction Plans and Specifications

Once the project is fully defined, RK&K will proceed with the development of construction plans and specifications. The plans and specifications will be prepared to support the various phases of the project. Upon completion, the plans will be combined with the bidding and contract documents necessary to advertise the project for bid. The plans will provide a detailed description of the work to be completed by the contractor. The plans will be supplemented by detailed specifications defining the method of completing the work and the material specifications. RK&K's detailed specifications have been refined over years of working within the State, incorporating the lessons learned from prior projects.

During the development of the contract plans and specifications, RK&K will meet frequently with DNR to review progress and receive input. Normally, plans for owner and regulatory agency review and comment are submitted at 60%, 90% and 100% completion status.

Preparation of Bidding and Contract Documents

With completion of the plans and specifications, RK&K will commence preparation of the contract and bidding documents in anticipation of advertising the project for bids. This complete package will be used to define the project requirements from a contractual perspective for uniformity of requirements among all contractors.

Assembly of the contract and bidding documents completes the project package. As determined by DNR and stipulated in the EOI, all construction contracts will be completed in conjunction with services procured under Chapter 5G of the WV Code and will be governed by the AIA A101-2007 and A201-2007 or the A108-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained in the EOI. RK&K will prepare these documents as determined by DNR funding requirements.

Following preparation of the complete construction document package, updated permits will be obtained from the Department of Health, Department of Environmental Protection and other applicable entities before going to bid. All necessary rights-of-way or easements must be acquired. RK&K will prepare the permit applications for the DNR's submittal. RK&K will provide any technical assistance required during the review process. RK&K is licensed to survey and prepared to assist DNR in securing easement(s) and right-of-way(s). Although these approvals are straightforward, they will take time.

Bidding Phase Assistance

With approval of DNR, the project can proceed to bid advertisement. A contract of this scope of work is normally advertised for three to four weeks to allow sufficient time for contractors to assemble prices and prepare a competitive bid. During that time, RK&K will conduct a pre-bid meeting with the contractors to review the project and answer any questions. An addendum will be issued as necessary to clarify any element of the project.

The project will be advertised for bids in accordance with state law and agency requirements. Projects are normally advertised in the local and regional newspapers. Advertisement in the Charleston or adjacent newspapers is also recommended to reach a wide audience of contractors. In addition to the newspapers, plans will be placed with Dodge Reports, West Virginia Contractors Association and other plan rooms in the West Virginia area. The objective is to alert as many contractors as possible and increase competition towards securing a low bid for the project.

At a specified date and time, bids will be collected at a designated location. RK&K will then assist DNR in opening and reviewing bids. The apparent low bidder will be announced at the end of the meeting.

Participation in the Evaluation of Bids Received

After the bids are opened, RK&K will review each submittal package in detail. This review includes verifying that the math is correct; verifying that all documentation required is satisfactory. Some of these requirements are initially checked at the bid opening; and evaluating the contractors' ability to accept and satisfactorily complete the project. This could include evaluation of financial assets, current workload, previous projects and discussion with previous clients and engineers who have worked with the contractor.

After the comprehensive review is completed, RK&K will make a recommendation to award the contract to the selected contractor. At this stage of the project, RK&K will prepare the NOTICE OF AWARD and CONTRACT AGREEMENT to send to the contractor. After the contractor signs the contract agreement and returns it along with the payment and performance bonds and any other required documents, RK&K will issue, with DNR approval, a NOTICE TO PROCEED. A contractor normally has ten days to begin construction after receipt of this notice.

Monitoring and Inspection of Construction Activities

RK&K will serve as the communication link between DNR and contractor. Shop drawings and submittals furnished by the contractor will be reviewed by RK&K for compliance with plans and specifications. The project engineer will monitor construction, visiting the site as often as necessary as the project proceeds.

RK&K's Project Manager will conduct monthly progress meetings with DNR and the contractor to review the projects' progress. The Project Manager will also review the contractor's pay requests to verify quantities and recommend payment for work completed. At the completion of the project, RK&K will conduct a walk-through inspection with DNR and contractor, prepare a punch list of items needed to be completed and conduct a final inspection after work is complete. RK&K will also provide technical assistance during the one-year warranty period to resolve any problems that may occur. Near the end of the warranty period, RK&K will conduct a final inspection of the facility with the DNR. Any problems or defects noted will be sent to the contractor for correction.

RK&K will provide full-time inspection on the project, if desired by DNR. RK&K employees are knowledgeable about traditional as well as state-of-the-art-construction inspection practices/procedures and materials testing techniques. DNR will be provided the opportunity to approve the inspector recommended by RK&K for the work. The inspector will work to confirm that the project is completed in accordance with the plans and specifications. The project inspector will be provided with all necessary assistance from RK&K's project manager to make sure the project is completed in accordance with the plans and specifications.

PROJECT MANAGEMENT

Effective project management begins with creating the best team possible to accomplish the required work. We have assembled a comprehensive team experience in water system design, operations and maintenance. As previously mentioned, John Cole will be the main point of contact and Project Manager leading our team. His proactive approach to establishing and maintaining open communication and cooperation among the team allows our team to quickly adjust to project changes and resolve issues without confusion or delay. As Project Manager, he will make sure that project tasks are progressing on schedule and on budget. He will also be responsible for ensuring that our team is performing the appropriate quality control checks.

Our exceptional project management process, team coordination, and early and continuous coordination with DNR's staff and regulatory agencies will lend to a successful project delivery. RK&K's project management tools include RK&K's in-house Project Management Guidelines that are a collection of best management practices proven to produce successful projects. Mr. Cole will utilize the guidelines and software tools to manage these projects including Microsoft Project for planning and scheduling tasks, resources, and deliverables. RK&K's project cost reporting software will be used to track project labor and other direct costs. Project charges will be updated on a weekly basis providing Mr. Cole with the latest cost information for each of the projects they are managing.

MANAGEMENT APPROACH

RK&K's management approach is based on providing the following commitments to clients:

- Meeting established schedules and exceeding expectations by responding rapidly to client requests;
- Manage multiple assignments simultaneously, if required;
- Uphold quality of service through implementation of our in-house Quality Assurance and Quality Control (QA/QC) Program; and
- Dedicate the appropriate resources and experienced staff to meet accelerated schedules.

Work on these projects will begin with a project initiation meeting to establish a clear project understanding and to determine the lines of communication between Mr. Cole, RK&K's Project Manager, and DNR's representatives. All project goals and requirements will be identified via an Internal Project Memorandum. After developing a clear understanding of the project requirements, Mr. Cole will draft the technical approach, anticipated schedule and staffing requirements, and fee estimate. These documents will be reviewed in draft format with the DNR's project manager. Once the draft scope of work and schedule, are approved, he will submit final documents for approval by DNR. Once DNR issues a Notice to Proceed, he will develop a Work Plan that documents the scope, budget, and schedule; identifies the standards that will be followed; identifies critical project elements; and establishes coordination requirements.

QUALITY ASSURANCE

Quality is paramount at RK&K. RK&K's Quality Assurance / Quality Control (QA/QC) Program will be a crucial component to maintaining the established schedule and budget for this project. RK&K's employs a continuous, multi-faceted QA/QC approach. RK&K places great emphasis on developing the highest quality engineering and environmental products. It is RK&K's belief that future assignments are obtained in large measure on how well current assignments are performed. RK&K utilizes standardized policies for maintaining quality in the work produced.

Quality Assurance and Quality Control is a top priority in the development of any RK&K project.

Through the rigorous application of appropriate criteria and sound engineering practice, QC for each assignment will be performed by every employee working on the project. Team members will utilize

RK&K's established QA/QC Program, which includes three major principles: **project management control, quality of work and cost control.**

Quality of Work

Coordinating with team members assures proper direction and flow of information. The successful implementation of such a course of action requires daily contact between the Project Manager and key staff members. RK&K will implement an established in-house Staff Operating Plan (SOP) which has proven successful in the past. QA/QC at RK&K is an active and iterative process beginning at project inception, concluding only after the project goals and objectives have been met. To comply with this approach, QA/QC will be addressed at various levels, as described in the previous section, with QC at the discipline lead level and QA at the discipline Project Manager/peer review level. No deliverable will be submitted to DNR without fully complying with our QA/QC process.

Execution of tasks assigned under this contract is an extension of RK&K's QA/QC procedures and requires an effort by all involved personnel in producing quality documents (studies, reports, plans, specifications, etc.) that: are complete, accurate and concise; provide sufficient detail and description; are consistent with established codes, design criteria and West Virginia and federal standards; provide a completed product that is constructible, operable and maintainable; and completely satisfies the needs of the DNR.

Cost Control

RK&K maintains a cost accounting system (DELTEK system) that is capable of segregating and identifying accumulating costs for each job performed under Cost-Type projects. The Project Manager will carefully monitor budgets on a weekly basis. RK&K's DELTEK system allows managerial staff to monitor progress versus budget, which aids in the identification of potential problem areas and allows the implementation of appropriate remedial actions early enough in the project to make sure that tasks are completed within budget. RK&K's system provides the project management team with a report that includes a breakdown of man-hours and payroll by individual tasks for "budget", "actual payroll used", "available to complete" and the budgeted and actual hourly payroll rates which enables the project manager to monitor the project status quickly and efficiently.

RK&K's cost accounting system is a valuable asset for monitoring project progress versus budget.

PROJECT TEAM

RK&K provides planning, design and construction phase services daily for water system projects throughout the mid-Atlantic and Southeastern Regions. Team members chosen for this project have extensive histories working on successful water line replacement projects. The following paragraphs provide information on key staff members chosen for these projects.

As Project Manager, John W. Cole, PE will oversee the administrative and technical aspects of each project and make sure consensus is reached at each phase and that the design solutions we develop are responsive to DNR's goals and needs. He offers his 17 years of diverse experience in the field of water system design to this project where he has been the lead engineer and managed numerous water system projects simultaneously. He will remain in contact with DNR for the project's duration ensuring the progress of the work and verifying DNR's needs are met.

Michael W. Myers, PE, Partner, has more than 33 years of municipal engineering experience and will serve as Partner-in-Charge. Mr. Myers is responsible for RK&K's water/wastewater practice firm-wide and will ensure adequate resources are made available to the project team to successfully deliver all required services. He is experienced in all aspects of sanitary/environmental engineering including planning, design, permitting, construction, operation and maintenance and troubleshooting for water and wastewater pipelines, pumping stations and treatment facilities throughout West Virginia and the mid-Atlantic and Southeastern Regions.

Mr. Myers will ensure that RK&K's standards of quality and performance are maintained and that DNR is satisfied with the level of service we are providing. He will also assist with the management of contract negotiations. He places the full weight and integrity of the RK&K leadership behind our Project Manager, John Cole, PE, and has dedicated the individuals shown on the organizational chart to make sure

our contract commitment is met. The RK&K Team is organized to offer Mr. Cole as a continuous, single point of responsibility to DNR for the duration of each project.

RK&K's Team Members bring a unique mix of skills, experience and portfolio of working together on dozens of water infrastructure projects. This collective depth and breadth of our personnel's experience makes our team perfectly suited to promptly deliver all aspects of work required for these projects. They will assist the key leaders listed above on these projects. Each have been chosen for their ability and experience on past relevant projects, as well as availability to perform the work. This team has provided a multitude of planning, design and construction phase services for water system projects throughout West Virginia.

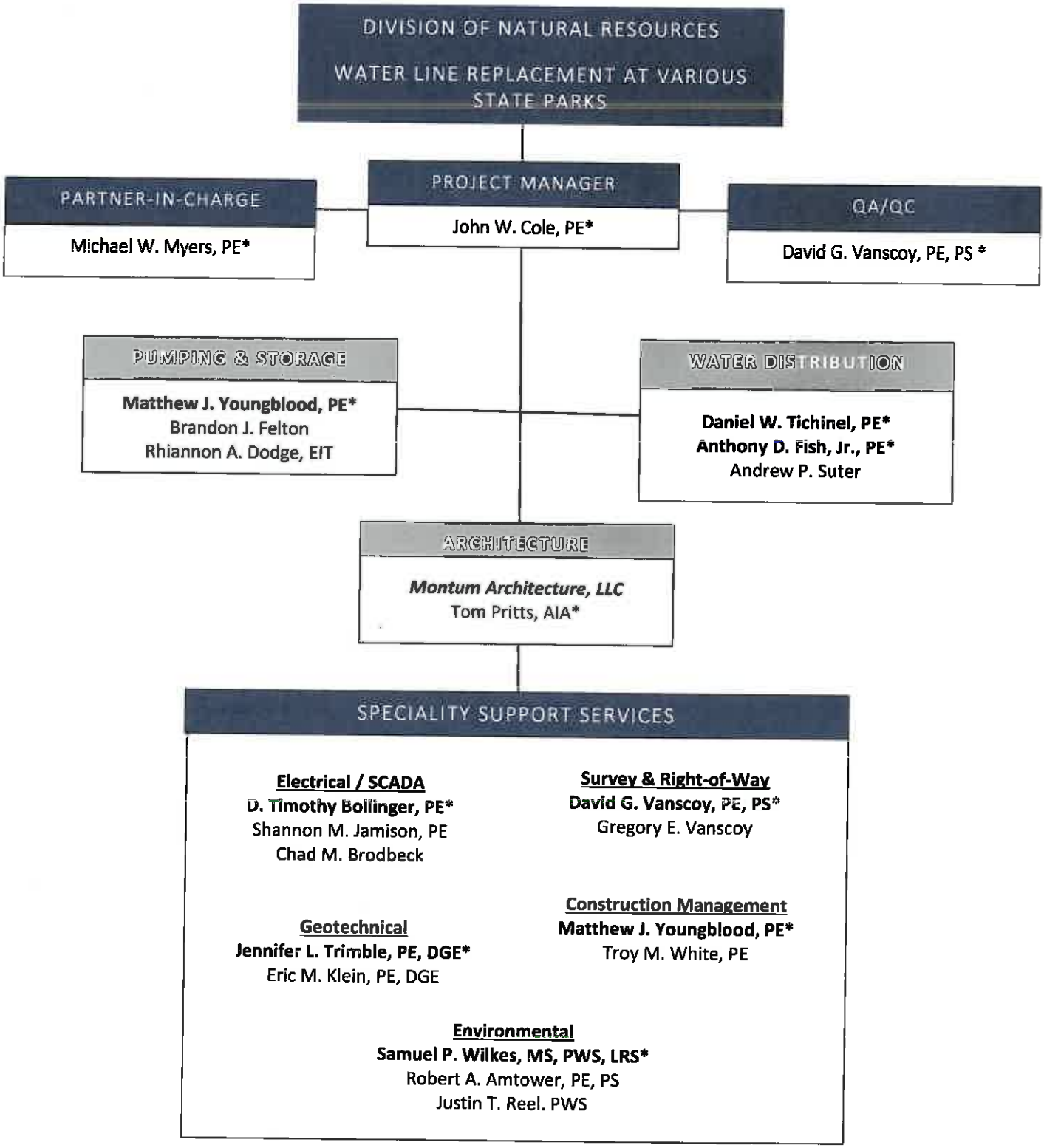
Subconsultant – RK&K will utilize the services of **Montum Architecture, LLC** to assist in Architecture services, if required. **Thomas F. Pritts, AIA** will lead Montum team offering his more than 15 years of experience in design, specifications, and project management gained on a wide range of projects, including several current and past projects for the DNR. Mr. Pritts is a member of the West Virginia Chapter of American Institute of Architects and was involved in the establishment of the US Green Building Council's West Virginia Chapter. RK&K will oversee all work provided by Montum.

Team Organization

As illustrated in our organization chart on the following page, we have assembled our team to be responsive to each item within the scope of work involved with these projects. As such, our team is equipped to work concurrently to deliver high-quality projects, on-time, and within budget. Each team member has more than sufficient staff capacity to devote to their areas of discipline.

Resumes of each key team member are also provided.

TEAM ORGANIZATION CHART



*Resume included

JOHN W. COLE, PE

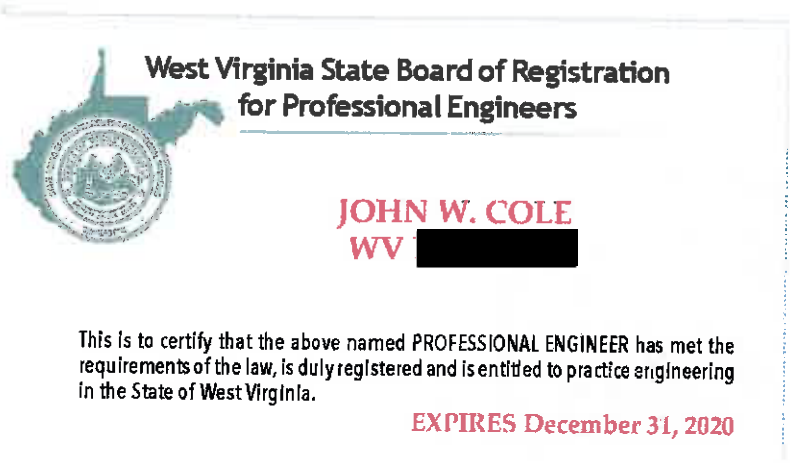
PROJECT MANAGER

Education: BS, Civil Engineering Technology, Fairmont State College, 2001

Professional Registration: Professional Engineer, WV, 2008 [redacted]; also registered in MD, VA & OH

Experience: 17 years

Mr. Cole has been actively involved in the planning, design, and construction of West Virginia's infrastructure projects for more than 17 years, providing industry leadership through addressing the region's infrastructure needs. He has diverse experience in design of water and wastewater treatment plants, pumping stations, distribution and collection systems, subdivision development, and construction management. His responsibilities include full project delivery including feasibility studies, design, construction plans and specifications, cost estimating, construction administration inspection and engineering.


West Virginia State Board of Registration for Professional Engineers

JOHN W. COLE
WV [redacted]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

EXPIRES December 31, 2020

Charles Town Utility Board On-Call Water & Sewer Projects, Charles Town, WV: Project Manager responsible for overseeing design and construction phase services for various water and sewer on-call projects. Through several Tasks, various water projects have ranged from the design and construction of over 10 miles of water mains; improvements to the single WTP including a 1 MG water storage tank; preparation of numerous preliminary engineering reports, evaluations, studies, and plans; construction of three emergency back-up generators; to overseeing painting of several elevated water storage tanks and water treatment plants.

Berkeley County Public Service Water District, Berkeley County, WV: Project Manager responsible for overseeing design of 1,830 LF of 12" CL 51 DIP water line and 2,390 LF of 16" CL 51 DIP water line within residential areas around the City of Martinsburg, WV. The purpose of the water lines is to replace the existing small diameter water mains with large mains whereby improving the overall hydraulics of the water system.

U.S. Route 40 (National Highway) Water Distribution System Improvements, LaVale Sanitary Commission, LaVale, MD: Assisted in the design and construction of a water distribution mainline replacement project. Project consisted of installation of approximately 22,000 lf of water distribution line, 38 fire hydrants, 280-meter assemblies, and 24 connections to existing water line.

Puzzley Run Water Treatment Plant, Grantsville, MD: Project Manager responsible for overseeing the design of a duel train 100,000 gpd water treatment plant and approximately 3,300 LF of 6" diameter raw water main through sensitive habitat with minimal disturbance.

Town of Lonaconing Water Line Extension, Allegany County, MD: Engineer assisted in design and construction of over 21,600 LF of water line replacement within the Towns of Barton and Midland.

Thayerville Water System, Thayerville, MD: Engineer responsible for the design of a 600 gpm water treatment facility, 165,000 gallon water storage tank; 1,000,000 gallon water storage tank, 110 gpm and 50 gpm remote booster stations, and distribution system consisting of various lengths of 2" through 12" dia. pipe.

Wiley Ford Water Line Replacement, Mineral County, WV: Project Engineer. Developed the hydraulic model on the replacement of the approximately 55,400 LF of water mains to improve the service and quality of water.

MICHAEL W. MYERS, PE

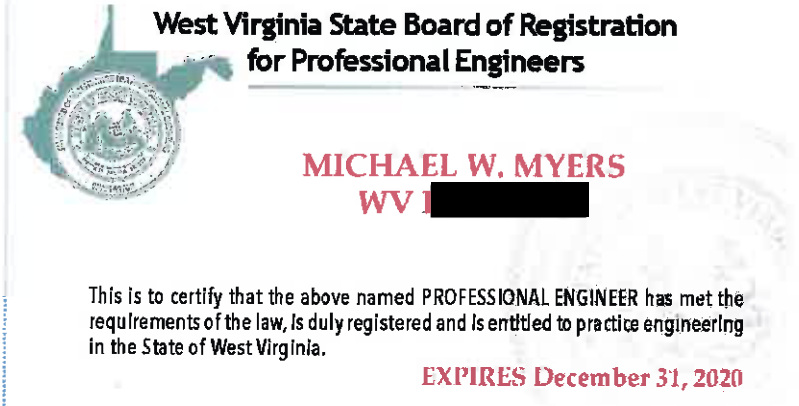
PARTNER-IN-CHARGE

Education: BS, Civil Engineering, Pennsylvania State University, 1985
MA, Management, Webster University, 1989

Professional Registration: Professional Engineer, WV, 2009 [redacted]; also registered in MD, PA, VA, FL, NC, TX, DE, & DC

Experience: 33 years

Mr. Myers is responsible for RK&K's municipal water/wastewater engineering and utility design practice firmwide, and will make sure adequate resources are made available. He has extensive experience with water, wastewater and stormwater infrastructure improvement projects, and has served as a project manager and designer on many technically diverse planning, study and design projects throughout the mid-Atlantic and Southeastern Regions.


West Virginia State Board of Registration for Professional Engineers

MICHAEL W. MYERS
WV [redacted]

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EXPIRES December 31, 2020

Berkeley County Public Service Water District Water Audit, Berkeley County, WV: Provided quality control and technical oversite for a water system audit of BCPSWD's Northern Service Area. The purpose of the project was to identify sources of real and apparent water losses which were creating persistently high levels of non-revenue water in the Northern Service Area. The project ultimately lead to the reduction of non-revenue water to acceptable levels.

Charles Town Utility Board On-Call Water & Sewer Projects, Charles Town, WV: Partner-in-Charge for overseeing design and construction of various water and sewer on-call projects. Projects range from the design of new sewage lift stations, modifications to an existing sewage lift station, design of over 20,000 LF of sewage force mains, to overseeing painting of two elevated water storage tanks and water treatment plant.

DB Water & Sewer Deficiencies Correction, Martinsburg, WV: Principal. As a consultant RK&K assisted on major improvements to the water and sewer system at the VA Medical Center in Martinsburg, WV. Scope of work involved new and replacement water and sewer lines, removal and reclamation of existing abandoned water and sewer infrastructure and rehabilitation or replacement of existing sewer collection system.

Frankfort Public Service District Water System, Wiley Ford, WV: Principal. Water system evaluation, upgrades/improvements, and extension projects for the FPSD's water system to include preparation of a preliminary engineering study and report which will be used for funding applications; system evaluation; preliminary and final design services; preparation of all necessary permit applications; preparation of construction plans, specifications, and bidding documents; assistance during bidding; and construction administration and inspection services.

County-wide Radio Telemetry System, Berkeley County, West Virginia: New Design Water Treatment Plant Expansion, Frederick County, MD: Technical Reviewer for preliminary engineering and design for a 20-mgd expansion to the existing treatment plant. Work includes design of new dry and liquid chemical feed systems, overall site layout, development of hydraulic calculations and profiles, process design for pre-sedimentation, rapid mix, flocculation, sedimentation, filtration, and finished water storage.

DAVID G. VANSCOY, PE, PS

QUALITY ASSURANCE AND QUALITY CONTROL/SURVEY & RIGHT-OF-WAY

Education: MS, Structural Engineering, West Virginia University, 1972
BS, Civil Engineering, West Virginia Institute of Technology, 1970

Professional Registration: Professional Engineer, WV, 1974 [redacted]; also registered in MD
Professional Surveyor, WV, 1995 [redacted]

Experience: 46 years

Mr. Vanscoy has more than 46 years of experience in design and management of diverse civil engineering projects including streets/roadways, water distribution and treatment facilities, wastewater collection and treatment facilities, and site development. Mr. Vanscoy is very skilled in working with multidisciplinary teams on large, complex projects to ensure seamless interfaces between disciplines, as well as interfacing with local interests involved in smaller projects in ensuring that their needs are met.

West Virginia State Board of Registration
for Professional Engineers

DAVID G. VANSCOY
WV [redacted]

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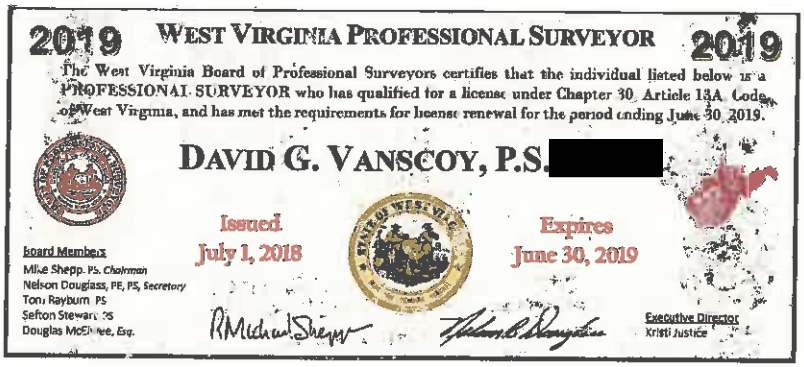
EXPIRES December 31, 2020



2019 WEST VIRGINIA PROFESSIONAL SURVEYOR 2019

The West Virginia Board of Professional Surveyors certifies that the individual listed below is a PROFESSIONAL SURVEYOR who has qualified for a license under Chapter 30, Article 13A, Code of West Virginia, and has met the requirements for license renewal for the period ending June 30, 2019.

DAVID G. VANSCOY, P.S. [redacted]

Issued July 1, 2018

Expires June 30, 2019

Board Members
Mike Shepp, PS, Chairman
Nelson Douglass, PE, PS, Secretary
Toni Rayburn, PS
Sefton Stewart, PS
Douglas McElwee, Esq.

Executive Director
Kristi Justice

Frankfort Public Service District, Wiley Ford Water System, Mineral County WV: Director in Charge for replacement of approximately 55,400 LF of water main to improve the service and quality of water. The project also included a new 300,000 water tank and booster station to provide improved water pressure and supply. The second phase of this project will be locating a suitable well(s) source.

Thayerville Water System, Garrett County, MD: Director in Charge responsible for the design of a 600 gpm water treatment facility, a 1 MG & a 165,000 gallon water storage tanks, a 110 gpm & a 50 gpm remote booster stations, and distribution system consisting of various lengths of 2" through 12" dia. pipe.

New Creek Water Association, New Creek, WV: Director in Charge for evaluation of existing system. Project manager for design and construction of 140,000 gallon storage tank; 350,000 gallon storage tank; 30,000 gallon storage tank; new booster station; upgrade booster pumping stations; addition of fire hydrants to system; drilling of well.

Charles Town Utility Board On-Call Water & Sewer Projects, Charles Town, WV: Director in Charge responsible for overseeing design and construction of various water and sewer on-call projects ranging from the design and construction of over 10 miles of water mains; improvements to the single WTP; numerous preliminary engineering reports, evaluations, studies, and plans; construction of three emergency back-up generators; and painting of several elevated water storage tanks and water treatment plants.

Town of Lonaconing, Maryland, New Water Distribution System: Director in Charge for the design and construction of over 40,000 LF of water line replacement, touch read and radio read water meters to existing system through multiple projects in various phases.

MATTHEW J. YOUNGBLOOD, PE

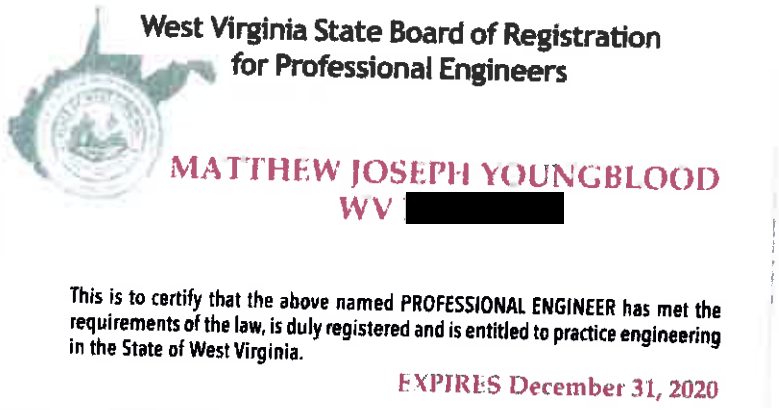
PUMPING & STORAGE/WATER DISTRIBUTION/CONSTRUCTION MANAGEMENT

Education: BS, Civil Engineering, West Virginia University, 2006

Professional Registration: Professional Engineer, WV, 2016 [redacted]

Experience: 12 years

Mr. Youngblood has 12 years of experience with a background in municipal wastewater/water treatment design and collection system infrastructure. His skills include facilities planning, preliminary study and design of water and wastewater facilities, water distribution network and sewer network, and construction management services.


West Virginia State Board of Registration for Professional Engineers

MATTHEW JOSEPH YOUNGBLOOD
WV [redacted]

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EXPIRES December 31, 2020

Frankfort Public Service District, Wiley Ford Water System, Mineral County WV: Construction Engineer for replacement of approximately 55,400 LF of water main to improve the service and quality of water. The project also included a new 300,000 water tank and booster station to provide improved water pressure and supply.

Water Line Extension, Town of Lonaconing, Allegany County, MD: Designer on four water improvement projects including new lines and line replacement in the Towns of Midland, Barton and Lonaconing. Assisted with construction management of all four projects.

Water System Improvements, Town of Lonaconing, Allegany County, MD: Construction Engineer for the replacement of Koontz Run Dam. Existing earth dam was replaced with 3-million-gallon pre-fabricated concrete tank.

Oakland Water Distribution System Study, Town of Oakland, MD: Engineer for design of waterline replacements on numerous streets in Oakland, which included the design of booster stations to provide adequate pressure to water customers within the system.

Deep Creek Lake State Park, Garrett County MD: Designer on the replacement of water line and two chlorination feed stations. Designed an RV dump station to expand the traffic volume for the camp ground.

Carolina and Idamay Sewer System Replacement Project, Greater Marion Public Service District, Marion County, WV: Assisted with Inflow and Infiltration study with sewer camera inspections. Designer on vacuum sewer line relocation to improve the efficiency of the sewer collection system in the Town of Idamay. Assisting with design to replace the vacuum system with gravity and force main sewer system. Construction Engineer on replacement of the vacuum system.

Northern Mineral County Regional Sewer System Phase 1 Collection System, WWTP (CM/CI), Mineral County, WV: Construction Engineer for this new regional sewer collection system which includes over 20 miles of sewer collection lines. Engineering oversight of 0.6 mgd Wastewater Treatment Plant to serve Northern Mineral County.

Northern Mineral County Regional Sewer System Phase 2 Collection System, Mineral County, WV: Construction Engineer on construction of new gravity collection and force main sewage system to replace individual septic systems and old collection system which was in non-compliance with state regulations. The project included a river crossing and installation of three duplex pump stations with auto-dial alarm systems. Both portable and permanent generators were provided as part of the project.

Romney Collection System Replacement, Phase 1, Hampshire County, WV: Assisted in the construction management of the sewer collection system replacement project.

Tuscan Ridge Subdivision Site Development, Atlantic Land Corporation, Davis, WV: Assisted with design of roadway layout, which included sizing culverts for drainage in the subdivision. Also assisted with the design and layout of the water and sewer utilities.

DANIEL W. TICHINEL, PE

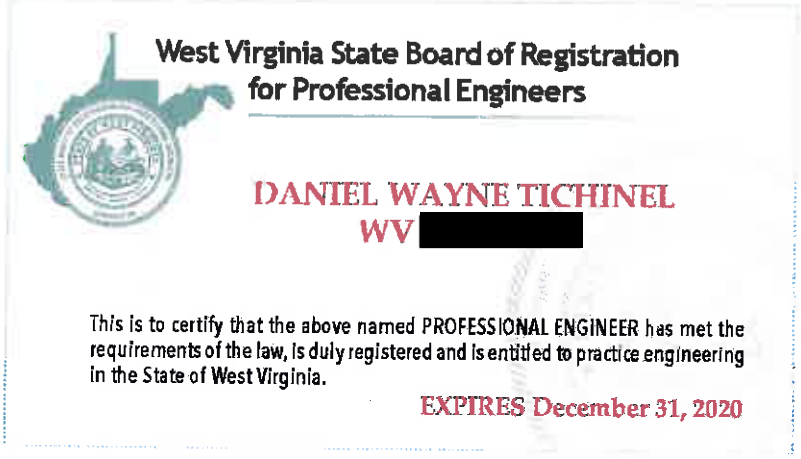
WATER DISTRIBUTION

Education: BS, Civil Engineering, Bucknell University, 2010

Professional Registration: Professional Engineer, WV, 2015[redacted] also registered in MD

Experience: 8 years

Mr. Tichinel has eight years of civil engineering experience with an emphasis on water and wastewater infrastructure. His experience includes preparation of preliminary engineering reports (PER) and environmental reports (ER), the design of water distribution systems and sanitary sewer systems, including pump stations and collection and conveyance system evaluation, pump station rehabilitation design, new pump station design, pressure reducing stations, water treatment plant design, storage tank design, and pipeline replacement/realignment projects.



West Virginia State Board of Registration for Professional Engineers

DANIEL WAYNE TICHINEL
WV [redacted]

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EXPIRES December 31, 2020

Frankfort Public Service District, Water System Upgrade, Contract 3 – Water Treatment Plant Improvements, Fort Ashby, WV: Project Engineer responsible for design of numerous improvements including water filter and valve upgrades; sediment basin upgrades and maintenance; raw water and grinder pump upgrades maintenance; dewatering pump station upgrades; 1500 sf storage facility, intake maintenance, plant painting.

Town of Oakland, Water Distribution & Sewer Collection System Improvements, Vertical Bar Screen, Oakland, MD: Project Engineer responsible for an upgrade to the existing waste water pump station basket strainer and grit chamber. The design included removing the existing basket strainer and installing a vertical bar screen. Installation of the vertical bar screen has reduced the amount of debris being pumped to the Oakland WWTP.

Frankfort Public Service District, Water System Improvements, Contract 4- Waterline Construction & Pump Station: Project Engineer responsible for the design of a new 150-gpm pump station along Painter Hollow Road.

Town of Luke – Preliminary Engineering Report, Luke, MD: Project Engineer responsible for preparing a PER to examine the feasibility and probable costs for various water distribution and water supply alternatives to improve the Town's water supply and service. Preparation of the report involved evaluating three different water distribution alternatives and six different water source options for the Town.

Garrett County Department of Public Works – Deep Creek WWTP Preliminary Engineering Report / Environmental Reports: Project Engineer responsible for preparation of a PER & ER for the 2.2 MGD Deep Creek Lake WWTP Enhanced Nutrient Removal upgrade.

Garrett County Department of Public Works – Trout Run WWTP Preliminary Engineering Report / Environmental Reports: Project Engineer responsible for preparation of a PER & ER for the 0.9 MGD Trout Run WWTP Enhanced Nutrient Removal upgrade.

Berkeley County Public Service Water District – Phase B Distribution System Improvements, Berkeley County, WV: Project Engineer responsible for design of 1,830 LF of 12" CL 51 DIP water line and 2,390 LF of 16" CL 51 DIP water line within residential areas of the County to improve the overall hydraulics of the water system.

Puzzley Run Water Treatment Plant, Grantsville, MD: Project Engineer responsible for design of a 100,000 gpd water treatment plant. The design included the treatment facilities, site layout and associated mechanical equipment. The project achieved the client's desired treatment capacity while minimizing the site's disturbance area.

ANTHONY D. FISH, JR., PE

WATER DISTRIBUTION

Education: BS, Civil Engineering, West Virginia Institute of Technology, 1992
AS, Drafting & Design Engineering Technology, WV Institute of Technology, 1987

Professional Registration: Professional Engineer, WV, 2004 [redacted]; also registered in MD

Experience: 25 years

Mr. Fish recently joined RK&K as Senior Project Engineer in RK&K's newly opened Charleston, WV office. Mr. Fish brings 25 years of experience as a civil engineer, including experience on projects in West Virginia, with strong design and project management skills. Qualified in all phases of project development, his experience includes problem identification, conceptual solutions, cost estimating, preliminary and final design, plan production, contract development, work selection, contract administration, construction inspection and field engineering. Before joining RK&K, Mr. Fish was the Assistant City Engineer for the City of Charleston, West Virginia (2003-2016) where he managed small, medium and large design and construction projects.

West Virginia State Board of Registration for Professional Engineers

ANTHONY D. FISH
WV [redacted]

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EXPIRES December 31, 2020

Court Street Pump Station Rehabilitation, Charleston, WV: Project Manager and Design Engineer over last major, $495k rehabilitation and retrofit of the Court Street Pump Station. Oversaw the design and construction of a major pump station rehabilitation and upgrade. Upon successful separation of the storm and sanitary flows in the Court Street area, the 1970's era technology facility was replaced with modern lifting pumps, an updated control and automation system, and a separated redundant external pump which starts and operates on natural gas in the event of a main system shutdown or power failure.

Garrison Avenue / Magazine Branch Storm Sewer Rehabilitation, Charleston, WV: Lead Designer who oversaw construction of a major rehabilitation to the Garrison Avenue storm sewer. The main line, consisting of twin structures 96" to 60" in diameter and 10,600 LF was rehabilitated fully at several joints and a new pipe invert was placed using shotcrete and pumped epoxy. Several laterals were replaced, and access / manholes were rehabilitated and replaced at seven locations.

Virginia Street Pump Station Rehabilitation, Charleston, WV: Project Manager for a replacement of a failing lift station pump located at the Railroad underpass on Virginia Street West. A lift station serving a narrow urban railroad underpass failed during a particularly wet West Virginia Spring causing localized flooding and resulting in full roadway closure. Designed and implemented an emergency pump replacement and control and power system rehabilitation to quickly return the lift station and the roadway to service.

Twilight Drive Storm Sewer Rehabilitation, Charleston, WV: Assistant City Engineer. Planned and reconstructed a large, failed concrete box channel transporting water from the Twilight Drive incinerator, under Barlow Drive and to the Elk River. The project involved reconstruction of large collapsed segments of the conduit, rehabilitation of joints and the placement of approximately 725 feet of new invert.

Assistant City Engineer, City of Charleston, WV: Worked in a variety of disciplines including structural, architectural, transportation and geotechnical engineering design and mapping and GIS development. Management of small, medium and large design and construction projects.

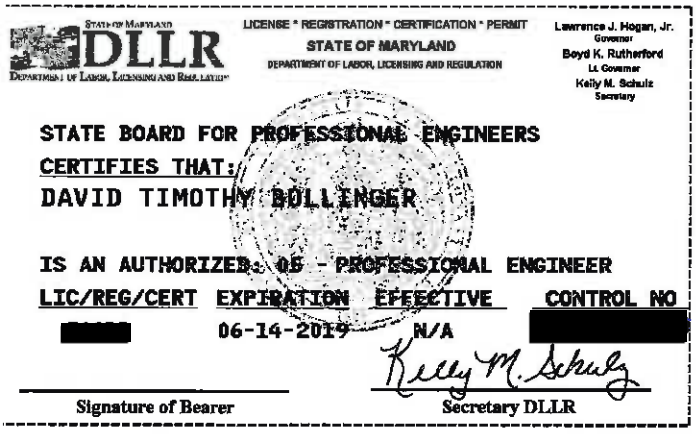
D. TIMOTHY BOLLINGER, PE

ELECTRICAL/SCADA

Education: BS, Civil Engineering, Bucknell University, 1977

Professional Registration: Professional Engineer, MD, 1984[redacted]; also registered in PA, NC, & VA

Experience: 41 years



STATE OF MARYLAND DLLR
DEPARTMENT OF LABOR, LICENSING AND REGULATION
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Lawrence J. Hogan, Jr. Governor
Boyd K. Rutherford Lt. Governor
Kelly M. Schulz Secretary

STATE BOARD FOR PROFESSIONAL ENGINEERS
CERTIFIES THAT:
DAVID TIMOTHY BOLLINGER

IS AN AUTHORIZED: 05 - PROFESSIONAL ENGINEER

LIC/REG/CERT	EXPIRATION	EFFECTIVE	CONTROL NO
[redacted]	06-14-2019	N/A	[redacted]

Signature of Bearer
Secretary DLLR

Mr. Bollinger's 41-year career involves the study and design of electrical and instrumentation/control systems for a variety of water and wastewater treatment and pumping facilities. He performed instrumentation and process control design for systems including programmable controllers, remote monitoring and control systems and personal computer operation. He provides electrical engineering support for RK&K's utility, energy and environmental projects, including electrical design inclusive of instrumentation and control and SCADA interfacing services. As part of the design process, he prepares detailed P&ID drawings and a description of operation.

City of Charles Town On-Call Water & Sewer General Services, Charles Town, WV: Project Engineer for on-call engineering services contract for water and sewer related projects, for which RK&K provided engineering and construction phase services to implement various improvements to the Charles Town Water Treatment Plant (CTWTP). Projects range from the design of new sewage lift stations, modifications to an existing sewage lift station, design of over 20,000 LF of sewage force mains, to overseeing painting of two elevated water storage tanks and water treatment plant.

Potomac River Raw Water Intake and Pumping Station, Berkeley County, WV. Project Engineer responsible for the electrical and instrumentation and control for the design of a 12 MGD raw water source pumping station and submerged intake. The project includes overall site layout, development of hydraulic calculations and profiles, mechanical and architectural design.

BOA Infrastructure VIII DCFA #435-WSA, DC: Electrical Engineer for SCADA/communications and related systems. Responsible for electrical and I&C system design for upgrades to the 16th & Alaska Pump Station. Design included a new control panel with redundant Modicon PLCs, Wonderware HMI software, process instrumentation and analytical instrumentation.

Broadneck Water Reclamation Facility ENR Upgrade and Expansion, Anne Arundel County, MD. Process Control Engineer for this $17M project involving schematic design, design development, final design and construction phase services to upgrade the County's 6-MGD secondary treatment facility in order to achieve ENR and to expand the facility to 8 MGD and evaluate the requirements to expand the facility to 9 MGD treatment capacity. Designed a complete new Process Control System consisting of MCCs, VFDs, control panels, instrumentation, 10 PLCs and HMI software.

SCADA Water Upgrade Project, Harford County, MD: Project Manager. Designed a SCADA system for the Harford County's water distribution system utilizing SCADAPack RTUs and licensed radios operating at a frequency of 173 mhz. The SCADA system will provide for monitoring and control of 12 water storage tanks, 11 booster stations, five wells, five interconnect vaults, and three water treatment plants. SCADA software is being provided for the system to provide for remote monitoring and control of the system from the Abingdon Water Treatment Plant, Perryman Water Treatment Plant and Havre de Grace Water Treatment Plant.

JENNIFER L. TRIMBLE, PE, DGE

GEOTECHNICAL

Education: MS, Civil Engineering, West Virginia University, 1999
BS, Civil Engineering, West Virginia University, 1998

Professional Registration:
Professional Engineer, WV, 2015 [redacted]; also registered in MD, DE, VA, PA, & DC
Diplomate of Geotechnical Engineering, 2016, National Designation [redacted]

Experience: 19 years

Ms. Trimble is responsible for planning and directing geotechnical explorations, preparation of geotechnical engineering reports, geotechnical analyses, conducting technical reviews, developing plans/specifications, and providing QA/QC in support of highways, rail transit lines, buildings, water and wastewater facilities and other civil engineering projects. Technical experience includes evaluation of subsurface conditions, in-situ testing, conducting seismic refraction studies, verifying groundwater levels, evaluating risks in potential sinkhole areas, and providing recommendations with respect to geotechnical engineering considerations.

West Virginia State Board of Registration
for Professional Engineers

JENNIFER LYNN TRIMBLE
WV [redacted]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

EXPIRES December 31, 2020

Belair Road Water Transmission Main, Towson, MD: Geotechnical Engineer who provided services for the construction of 9,500-ft of 24-inch water main located along Belair Road between Whitmarsh Blvd and Ebenezer Road. Coordinated SPT borings, field boring locations, subcontractor, MOT, utility clearance, and laboratory test program. Prepared Geotechnical Engineering Report to aid pipe trench construction.

On-Call Water & Sewer General Services, City of Charles Town, Jefferson County, WV: Project Engineer for on-call engineering services for water and sewer related projects for the Charles Town Utility Board (CTUB).

Water Resources Services, Montgomery County, MD: Task: Asbury Methodist Village Stream Stabilization. Senior Project Engineer who provided geotechnical engineering services for stream stabilization including 109-ft of rock toe protection and 113-ft long imbricated rip rap wall. Determine the subsurface conditions, evaluating results of laboratory testing, and prepared a Geotechnical Recommendations Memorandum. Coordinated drilling subcontractor, access to private property, and site safety. Prepared boring logs using gINT database. Performed slope stability analysis for proposed construction of a 9-ft high imbricated riprap wall. Prepared memorandum with geotechnical recommendations for the stream stabilization.

New Design Road Water Treatment Plant Expansion, Frederick, MD: Senior Project Engineer who prepared GER using borings and geophysics, construction documents/cost estimate and provided construction phase services for multi-structure plant expansion in a karst area. Monitored excavation and building movements to protect existing clarifiers, tanks and utilities during construction of 45-ft deep excavations that included void repair using aggregate or grouting. New buildings are supported on micropiles or mats/spread footings with void grouting.

SAMUEL P. WILKES, MS, PWS, LRS

ENVIRONMENTAL PERMITTING

Education: MS, Environmental Science & Policy, Johns Hopkins University, 2003
BS, Earth & Environmental Science, Wilkes University, 1996

Professional Registration: Professional Wetlands Scientist, 2003 [redacted]

Experience: 22 years

Mr. Wilkes has more than 22 years of consulting experience as a project manager and senior environmental scientist providing technical support to watershed management, restoration, natural resource conservation, and hazardous materials programs. Experienced at providing oversight and managing field teams and contractors collecting wetland, stream quality, environmental media data, and general site condition data for site characterization.


West Virginia
Department of
Environmental Protection

WILKES, SAMUEL PETER
Licensed Remediation Specialist
Registration Number: [redacted]

Director, Division of Land Restoration

09/15/2018 - 09/30/2020
Date Issued - Date Expires

Kanawha Valley Regional Transportation Authority Charleston, WV: Investigated and closed out the WVDEP case files for a leaking underground storage tank through the UECA program. Provided staff oversight and quality control to employees and subcontractors conducting the field investigation, data validation and risk assessment.

Wyoming County Economic Development Authority, WV: Former Lusk Lumber Treatment Plant Brownfield Site (WVVRP#16005), under the supervision of a Licensed Remediation Specialists, provided review and summary of previous investigations, composed sampling and analysis plan to address data gaps in previous investigations, coordinated with WVDEP Brownfields Staff. Anticipating sampling and developing remediation plan.

KU Associates, Logan County, WV: Performed a Phase I ESA on a property to be purchased and developed for senior housing. Discovered potential USTs in 1950s Sandborn Maps, which triggered a Phase II ESA with ground penetrating radar (GPR) survey. The GPR survey revealed anomalies, which led to geoprobe subsurface sampling. Numerous soil samples indicted presence of petroleum hydrocarbons. Advised client against purchasing property and to turn over documents to the County and WVDEP as an abandoned UST Case. Client redesigned the building footprint from single story to three-story. Advised client to conduct additional environmental sampling along property line to ensure that no contamination plume was moving toward the remainder of the property.

Aboveground Storage Tank (WV Senate Bills 373 and 423 Implementation), WV: Project Manager supporting numerous clients by conducting time critical visual inspections of approximately 2,000 ASTs throughout the state. Six inspectors were in the field for two months while an office support staff was processing daily reports from the inspectors into inspection logs, photo logs, reviews and recommendations for each AST. The inspection documentation resulted in a "Fit for Service", "Not Fit for Service", or "Fit with Required Repairs" determination for each tank. In addition, completed Spill Prevention, Response Plans for submittal to the WVDEP.

West Virginia Source Water Protection Plans, WV: Project Manager for the development of over 20 source water protection plans for community drinking water systems throughout the state of WV for WVDHHR Conducted meetings with public water systems, assessed potential threats to the source water, suggested preventative and mitigation strategies and developed source water protection plans.

Utah Voluntary Cleanup Program Support, Park City, UT: Worked collaboratively with UTDEQ Voluntary Clean-up Program staff and EPA to insure consistency between Superfund and VCP sites. Provided recommendations on other consultants Field Sampling Plans, Quality Assurance Project Plans, Site Characterization Reports, and Remedial Action Plans.

THOMAS PRITTS, AIA, LEED-AP, CSI-CCS

ARCHITECTURE

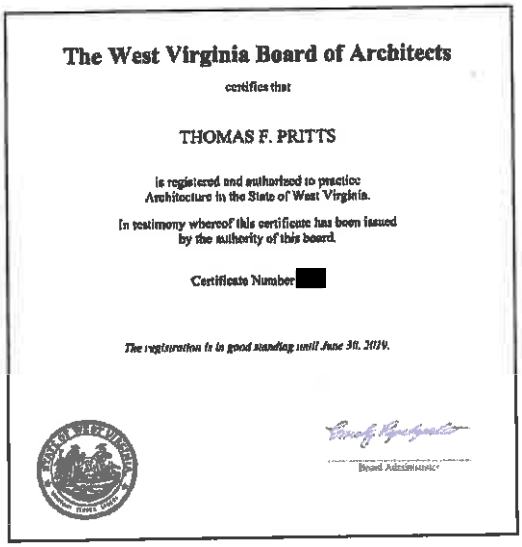
Montum Architecture

Education: BA, Bachelor of Architecture, Virginia Tech, 2004

Professional Registration: Licensed Architect, WV, MD

Experience: 15 years

Mr. Pritts will serve as our team's architect offering his more than 17 years of experience in architectural design, construction, and sustainable design practices. He is actively involved in all aspects of the project process, from the initial meeting to post-occupancy evaluation. Professional collaboration, innovative project delivery and an attention to detail are the qualities that define Mr. Pritts'. He is engaged at the professional, community and civic level and is a member of the West Virginia Chapter of American Institute of Architects and was involved in the establishment of the US Green Building Council's West Virginia chapter.



The West Virginia Board of Architects

certifies that

THOMAS F. PRITTS

is registered and authorized to practice Architecture in the State of West Virginia.

In testimony whereof this certificate has been issued by the authority of this board.

Certificate Number [redacted]

The registration is in good standing until June 30, 2019.

Board Administrator

Blackwater Falls State Park - Boiler Room Renovation: Renovated the existing boiler space as a result of the configuration of the replacement boilers having a smaller footprint. Design included new maintenance operations space. Work incorporated exterior access to the space and new pipe, electrical, and mechanical runs penetrating existing building structure.

Berkeley Springs State Park - Pool Bathhouse Roofing Replacement: Specified and managed the replacement of the modified bituminous roof system on the 1955 building.

District 2 Headquarters - Necropsy Lab: Design included the specification and integration of a pre-manufactured outdoor cooler unit for laboratory space and animal carcass cold storage. Work also included extending utilities from the existing district headquarters building and design of the make-up air unit for air changes during lab work.

Berkeley Springs State Park – Old Roman Bathhouse Renovation: This 1815 structure with multiple "modernizations" over the years, with varying condition issues. The project is listed on the National Registry of Historic Places as a contributing structure to the Town of Bath Historic District. Work includes general interior finish updates in character with the original structure, replacement of soaking tub plumbing, and various accessibility improvements. Tub structures will be repaired to stop water exfiltration. If project budget allows, exterior facade maintenance repair may also be completed. Project currently out to bid with construction to be complete in Spring 2019.

Cacapon State Park – Old Inn Renovation: Performed work as a sub-consultant to the MEP designer who designed heating and air conditioning systems to convert the building for four-seasons use. Designed interior renovations and selected furnishings reconfiguring the space from it former use as individual lodging rooms into "whole-house" rentals for large gatherings like family reunions and corporate events. Updated the kitchen space with pro-style appliances and "large meal"-friendly layouts.

Wastewater Treatment Plant Upgrade, City of Martinsburg, WV: Performed work as a sub-consultant to the Process Engineer. The design centered around a moving bed biological reactor. Architectural work included rehabilitation of existing building for new functions, new process buildings, and a new operations office building. Integration with process piping and equipment design was critical and typically those needs defined the building configurations.

FRANKFORT PUBLIC SERVICE DISTRICT WATER IMPROVEMENT
MINERAL COUNTY, WV

CLIENT

Frankfort Public Service District

CONTACT

Jerry Frantz
PO box 80, Wiley Ford, WV 26753
304.738.9552 jerryfrantz@frontier.com

RK&K completed a Preliminary Engineering Report (PER) for Frankfort Public Service District (FPSD) that evaluated the existing water system and developed plans for improvements. Along with the PER, a West Virginia Infrastructure and Jobs Development Application (WVIJDC) was completed by RK&K for the improvements. The WVIJDC application was approved, and design of the Water Improvement Project was completed by RK&K. The Water Improvement project consisted of well development, water treatment plant upgrades, waterline construction, water tank rehabilitation, a new pump station and new water storage tank, and water meter replacements.

Well Development: To allow the FPSD to maintain customer service during the Fort Ashby Water Treatment Plant filter upgrades, a 90 gpm well was developed along the south side of Knobley Mountain on Split Oak Lane. The well was completed July 2018.

Treatment Plant: The project includes numerous upgrades to the 22-year old water treatment plant that were identified during development of the PER, so the plant can continue to provide high quality water to customers. A major item includes upgrading two 350-gpm Trident 210-A packaged water treatment plant filters and Motor Control Center. RK&K developed a plan to allow the plant to remain in service during the filter upgrades by sequencing plant outages and developing wells for additional potable water during filter shutdowns.

Waterline Construction: The project consisted of upgrading 35,000 lineal feet of existing 2", 6", and 8" waterlines, as well as replacement of existing service lines and meters. The project reduced operating and maintenance costs for the FPSD by reducing waterline failures and increasing fire flow and pressure. This project was completed July 2018.

Pump Station and Water Storage: A new pump station was constructed along Painter Hollow to pump treated water to a new 152,000-gallon water storage tank along Middle Ridge. The project alleviated low pressure problems within the Sunrise Heights and Deerfield Estates subdivisions and eliminated the need for two booster stations and two deteriorated water storage tanks. The Middle Ridge storage tank was completed in March 2018 and the pump station was completed July 2018.

Fort Ashby Water Storage Tank Rehabilitation: The project included rehabilitation of the 160,000-gallon steel water storage tank through structural repairs to the tank and foundation, repainting, installation of a ladder guard and fall arrest system, and installation of an overflow air break. The tank rehabilitation was completed in July 2017.

EMERGENCY WATER LINE REPLACEMENT
NEW CREEK, WV

CLIENT
New Creek Water Association

CONTACT
Thomas Cooper, President
PO Box 194
New Creek, WV 26743
304.788.5886 newcreekwater@frontier.com

In August 2017, the New Creek Water Association (NCWA) retained RK&K for evaluation of the existing water distribution system to determine the reason for an increase in the number of breaks and leaks being experienced on the existing water system.

The existing water system was installed in 1972 and consisted of a 6" distribution line from the Pump Station along US 220 and WV 972, to the intersection of US Route 50, and an 8" line running from storage tanks on Stony Run and Cut Off (US Rt. 220) Roads.

It was determined that the problems were the result of original lines constructed of SDR 21 PVC installed with little or no bedding for protection. In addition, due to the widening of the roads, pavement had been placed over the water line in many locations.

RK&K submitted the project for Public Service Commission approval and provided design and preparation of contract plans and specifications for the project. Services included preparation of bidding and contract documents, participation in the evaluation of bids received, and monitoring and inspection of construction activities to ensure compliance with plans and specifications.

The project included the replacement of 6,500 feet of 6" SDR 21 and SDR 26 waterline along WV Route 972 / WV Route 93 from Rees Chapel Church to Potomac Highland Guild with new 8" C900 Cl. 235 PVC Waterline, 44 services, 6 fire hydrants, and valves. The project also provided funding for a PER to improve other areas of the water system including various waterline replacements, waterline extensions, pump station improvements, replacement of the Cut Off Water Storage Tank, water meter replacements, service line replacements, and other potential projects.

WILEY FORD WATER LINE REPLACEMENT
WILEY FORD, WV

CLIENT

Frankfort Public Service District

CONTACT

Rae Corwell
PO box 80, Wiley Ford, WV 26753
304.738.9552 rcorwellfpsd@atlanticbb.net

Wiley Ford, a community of 1,078 residents, is located on the West Virginia side of the Potomac River opposite Cumberland, Maryland. Evolving from early 18th century development, the community's growth accelerated in 1913 when the Homestead Development Corporation laid out 596 lots as the Wiley Ford Addition to the City of Cumberland. Further growth resulted from construction of the Potomac Highlands Regional Airport contiguous to the Wiley Ford community.

The existing private water system contained mostly small lines – 2" galvanized or less. 80% of the lines are 2" and in poor condition. As a result, there were pressure and volume problems within the system, particularly at the higher elevations. The system also had minimal fire protection available.

Frankfort Public Service District purchased this system and immediately started a project to completely replace and expand the system to the adjacent area.

A $400,000 project extension to Potomac Highland Regional Airport and the Community of Swan Pond was constructed with monies available from a bid under-run. The distribution system consisted of water line replacement and expansion including 14,195 LF of 8" water mains; 28,870 LF of 6" water mains; 12,255 LF of 2" water mains; 9,975 LF of ¾" water services; 54 fire hydrants; and 400 radio read meter services.

To replace the existing water being supplied by Cumberland, Maryland and at extremely high cost, Frankfort Public Service District chose to develop a well source. A 700' deep well was constructed furnishing 100 gpm. The water is pumped through treatment for chlorination and fluoridation into system storage tank.

A 300,000-gallon water storage tank, and a telemetry system were installed at the same elevation as Frankfort PSD existing Sherwood Acre tank allowing for the interconnection of the two systems.

As part of RK&K's services, we assisted FPSD in securing funding-loans and grants utilizing the cost savings realized by producing their water instead of purchasing it. As a result, FPSD was able to complete the project without raising rates.

TOWN OF OAKLAND WATER & SEWER IMPROVEMENTS
GARRETT COUNTY, MD

CLIENT

Town of Oakland

CONTACT

Gwen Evans
15 South Third Street. Oakland, MD 21550
301.334.2691 townofoak@gmail.com

The Town of Oakland retained RK&K as their engineering consultant to perform a study of the Town's water distribution and sewer collection systems. The study consisted of evaluating low pressure areas within South Third Street, Country Club Acres, Frazee Estates, and Winter's Development/Highland Estates, including the collection system along Second Street.

The Community's water system was constructed in the early 1920s and consisted primarily of cast iron water line. The Town has since replaced most of the cast iron line. As the system expanded, several developments were experiencing low pressure and inadequate fire flows due to existing at higher elevations.

Water System Improvement: Each low-pressure area was independently evaluated to determine the most cost-effective solution to improving system pressure. For the Third Street extended area it was determined that the line size feeding the area was undersized. This line, including a river crossing was replaced. The Country Club Acres area's low pressure was due to elevations. The most economical solution to this problem was the installation of a small booster pump station for the dozen homes affected. The other low-pressure areas were subdivisions with line elevations above the maximum service area. While individual booster pump stations were considered, the accepted solution was to connect both subdivisions with over 6,700 ft. of cross country transmission line to the higher elevation zone served by the existing Lowes Pump Station, eliminating operation and maintenance costs on two pump stations. In addition, replacement projects were developed to replace several other old lines in the system. Another aspect of this project was the replacement of the US 219/Oak Street water line as part of a planned MDSHA Streetscape Project.

Sewer System Improvement: The sewer project included replacement of an existing terra cotta line along US Rt. 219 with a new 10" SDR 35 PVC sewer line, including six manholes as part of the streetscape. A bar screen was installed in the upstream manhole at the Wastewater Treatment plant to replace a manual screen requiring significant maintenance resources.

Inflow & Infiltration (I&I) Study: RK&K is performed an I&I Study of the system which included the inspection of 436 manholes, flow monitoring and smoke testing throughout the Town. Manhole inspections revealed inadequate pipe connections, the inflow of groundwater, and infiltration of roots into the system. Flow monitoring revealed possible I&I which could result in the need for televising. Through smoke testing, RK&K discovered issues ranging from connected downspouts to storm inlets discharging into the sewer system. Recommendations were made to resolve the issues and eliminate I&I.

Funding: RK&K's services included assistance with securing funding for the project. Multiple funding sources were obtained, including Maryland Department of Environment and USDA-Rural Utilities.

MAYSVILLE WATER STORAGE TANK, WATER MAIN RELOCATION & PUMP STATION UPGRADE

GRANT COUNTY, WV

CLIENT

Grant County Public Service District

CONTACT

Grant County Public Service District
PO Box 806
Petersburg, WV 26847
304.257.2377

Grant County, West Virginia, nestled in the Potomac Highlands, is one of the fastest growing counties in the state. It has achieved this status for several reasons, one of which has been its progressive position towards providing safe, potable water to its citizens, farmers and commercial entrepreneurs. The Grant County PSD provides public water to the developed South Branch River valley areas and lower lying ridges. The District has aggressively pursued and obtained funding to construct over 174 miles of water mains, 14 storage tanks, and 15 pump stations. They now provide water to approximately 5,600 persons; about 49% of Grant County's population.

Design Services - RK&K was selected in 2006 by Grant County Public Service District for two projects planned to improve service and reliability. The first project consisted of the installation of 5,600' of hydraulically parallel 8" water line to an existing 3" and 4" dia. line. A pump station serving this line was upgraded to improve the service and reliability to the area south of the City of Petersburg. The second project was design of a new water storage tank at Maysville, WV to replace a 100,000-gallon concrete stave tank. New radio telemetry systems were installed to control the pumps based on the tank water level. RK&K prepared the Preliminary Engineering Report and Environmental Report. RUS approved these reports and funded $794,100 of the $900,000 project cost.

Scada System - The initial project utilized a radio-based telemetry system between the tank and the pump station to control the pump on-off status based on water elevation. RK&K was able to work with the PSD and the Telemetry System Integrator utilizing contingency funding to add additional telemetry controls on other pumps/tanks in the system. RK&K was also able to combine these into a system allowing the General Manager to have the pump station/tank level information readily available on a monitor in his office.

Construction Services – Two contracts totaling $658,407 were recently awarded for these projects. Construction has begun and is expected to be completed before the end of the year. The bids for the projects were opened February 2008 and were under the Engineer's estimate.

The second project was for the installation of a new 300,000-gallon water storage tank to replace a 100,000-gallon concrete stave tank. A sister to this tank had failed previously. New radio telemetry systems are being installed to control the pumps based on the tank water level. RK&K prepared the Preliminary Engineering Report and Environmental Report. RUS approved the reports and funded $794,100 of the $900,000 project cost.

BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT
BERKELEY COUNTY, WV

CLIENT

Berkeley County Public Service Water District

CONTACT

Christine Thiel, PE
251 Caperton Blvd, Martinsburg, WV 25403
304.267.4600 cthiel@berkeleywater.org

In 2015, RK&K was retained by the Berkeley County Public Service Water District (District) to provide on-call engineering services for various water improvement projects throughout the system in response to the construction of the new Proctor & Gamble facility. Work to date for the District includes the following:

Task 1 – Easement Acquisition

RK&K's scope of services involves assistance with obtaining easements and rights-of-way for the construction of various water mains.

Task 2 – Phase B – Distribution Improvements

RK&K's scope of services involved design, permitting, easement acquisition, and preparation of bidding plans and specifications for the construction of 800 LF of 12" Cl 52 DI water distribution mains; a CSX Railroad bore & jack crossing; 2,500 LF of 16" Cl 51 DI water distribution main along WV RT 45 Shepherdstown Road between Botany Drive and Eagle School Road; and replacing 1,200 LF of 8" existing water distribution main with a 12"Cl 52 DI water distribution main through the Opequon Meadows Subdivision. The purpose of the distribution improvements is to replace the existing water mains with larger mains thereby improving the overall hydraulics of the water system.

Task 3 – Co Rt 38 Blairton Road 12" & 16" Parallel Water Distribution System Improvements

RK&K's scope of services involved design, permitting, easement acquisition, and preparation of bidding plans and specifications for the construction of 6,700 LF of parallel 12" Cl 52 DI and 16" Cl 51 DI water mains from Co Rt 36 Golf Course Road to the existing Blairton Pump Station located along Co Rt 38 Blairton Road. The parallel water main also includes a CSX railroad bore, a Co Rt 36 Golf Course Road bore, three open cuts across Co Rt 38 Blairton Road, a Tuscarora Creek crossing, and an Opequon Creek Crossing. The parallel water main will allow Berkeley Water to connect the existing Blairton Pump Station with the new Grapevine Pump Station to convey larger volumes of water within the system.

THAYERVILLE WATER SYSTEM
GARRETT COUNTY, WV

CLIENT

Garrett County Department of Public Works

CONTACT

Patrick Hudnall
2008 MD Highway, Suite 2
Mt. Lake Park, MD 21550
301.334.7465 phudnall@garrettcounty.org

The Garrett County Department of Public Utilities retained RK&K's design services to design a water system to serve the residents and commercial development along the U.S. 219 and Glendale Road Corridors within Thayerville, including residents within the Mountainside Development. Water to the existing customer base is provided by individual and small system wells, most of which suffer from poor water quality and quantity. The proposed project consisted of constructing a water treatment facility, distribution system, two water booster stations and two water storage tanks. This project was a high priority for the County and as such, the engineering contract design time was limited to 160-days to provide the County with the necessary documents to advertise the project for construction, less regulatory agencies permit approval.

Treatment Plant: As part of the project, a 600 gpm water treatment facility was constructed adjacent to two (2) 300 gpm wells that the Garrett County Department of Public Utilities previously drilled. Treatment consisted of chlorination of the well water. The treatment facility consisted of two (2) parallel 300 gpm chlorine contact chambers flowing into a high service clear well. Limited space for the treatment facility resulted in a two-level structure. The lower level, below grade, housed the chlorine contact chamber and high service pumps while the upper level contained house controls, a small lab, a chlorine room, and a restroom. Location of the treatment facility, adjacent to Deep Creek Lake also dictated aesthetically pleasing façade on the exterior of the structure to blend in with the surrounding buildings.

Booster Stations and Water Storage: Due to the topographic layout of the area and to minimize excessive system pressures, while minimizing the number of pressure reducing valves (PRV's), the system will consist of three (3) pressure zones. The lowest zone (Zone 1) will served the customers below an elevation of 2710' while the second zone (Zone 2) will serve customers between elevations 2710' and 2918'. The upper most zone (Zone 3) will serve the customers above the 2918' elevation. Water storage for Zone 1 is a 1 MG water concrete storage tank while water storage for Zones 2 and 3 consists of a 165,000-gallon concrete water storage tank. Even though water from Zone 3 will be supplied from a water storage tank, system pressures will be dependent upon a booster pump.

Distribution System: The distribution system consists of 2" through 12" diameter pipe. Customers within Zones 1 and 2 will have fire protection while the customers within Zone 3 will have to rely on the proximity of Zone 2 for fire protection. The system was designed for future expansion around the lake.

LONACONING WATER SYSTEM IMPROVEMENTS
ALLEGANY COUNTY, MD

CLIENT

Town of Lonaconing

CONTACT

John W. Coburn, Jr., Mayor
7 Jackson Street, Lonaconing, MD 21539
301.463. 6233 debbie.keller21539@gmail.com

RK&K has successfully provided services to the Town of Lonaconing Water System for over a decade. Services have included design engineering, permitting, cost estimating, construction engineering and project representative inspection. The following paragraphs represent just a few of the tasks completed.

Phase I, II, III, and IV and Warnick Road: Completed in 2009, these projects replaced nearly 40,000 LF of water main in Lonaconing, Maryland area and included a booster pump station and 10,000-gallon water storage tank.

Buskirk Hollow and Miller Road: Contract was awarded in May 2008 for $930,800 to provide potable water or replace existing old lines to 47 customers. The project was completed $81,000 under budget in December 2008 with 8,800 LF of main line and nine fire hydrants installed involving three stream crossings.

Mill Run Water Line Extension: In 2007, Town of Lonaconing contracted RK&K to design a water distribution system to service the MillRun Community located south of Barton, Maryland. Design was completed, and contract awarded in July 2008 for $1.297 million to provide potable water to 54 customers. The project included over 15,000 LF of water line, a railroad bore, nine stream crossings, and eight fire hydrants. The project was completed in August 2009 at $80,000 under budget.

Town of Midland: RK&K completed design for project to replace old remaining water lines, valves, meters and hydrants in the Town of Midland, Maryland in 2008. The project was awarded in October 2008 for $1.226 Million funded by USDA's Rural Utility Service and Maryland Department of Environment. Construction commenced in November 2008, with RK&K providing construction representative services, and was completed in November 2009 at a cost of $1.094 Million - $132,000 under budget. Items installed include 7,600 LF of mainline, 100-meter upgrades to radio read, four fire hydrants, and three stream crossings.

Town of Barton: RK&K designed a project to replace and upgrade water distribution and service system in the Town of Barton, Maryland. The project was awarded in March 2010 for $1.876 Million funded by USDA's Rural Utility Service and Maryland Department of Environment. Construction commenced in April 2010 with RK&K providing construction representative services and was completed in June 2011, at a cost of $1.674 Million – $202,000 under budget. Items installed include 17,000 LF of mainline, 486-meter upgrades to radio read, and 16 fire hydrants.

Charlestown Road Waterline Extension: Design of a waterline extension project to extend potable water service to 15 residential sites in the Town of Lonaconing was completed by RK&K and awarded in March 2011 for $458,700, funded by Maryland Department of Environment, Bureau of Mines. Construction commenced in April 2011 with RK&K providing construction representative services and was completed in September 2011 at cost of $434,900 - $23,800 under budget. Items installed include a 25,000-gallon steel underground water storage tank, booster pump station, 3,040 LF of mainline, 16-meter assemblies, and three fire hydrants.