MOTT MACDONALD

Mott MacDonald
201 Pennsylvania Avenue
Suite 400
Charleston, WV 25302
304.356.3011
mottmac.com/americas

West Virginia
Division of Natural Resources
Property and Procurement Office
324 4th Ave
South Charleston, WV 25303-1228

Re: A/E Services for Cass Scenic Railroad SP Wastewater Repairs

February 18, 2019

Dear Members of the Selection Committee:

Mott MacDonald is pleased to present this Expression of Interest (EOI) to provide engineering services relating to construction of repairs, renovations, or improvements to water distribution, wastewater collection, or wastewater treatment systems in the state park system. This EOI will address our qualifications, experience, approach, and methodology for meeting project goals and objectives.

Mott MacDonald is a multi-disciplined engineering and construction management consulting firm employing highly qualified staff with many years of experience in delivering civil engineering and surveying services; from evaluation and design aspects through the construction and commissioning.

Mott MacDonald has extensive experience in planning, design, and construction management of small water and wastewater systems for the National Park Service. Climate, culture and natural resources, aesthetics, and seasonal fluctuations make this work unique and challenging.

We have assembled a team ready to work collaboratively with WVDNR's engineering, management, and operations staff to deliver an efficient and cost-effective repair and rehabilitation project.

We believe the Mott MacDonald team is the best choice for this project and offer the following benefits:

- Proven local Charleston-based project management and technical support
- Proven record of projects completed on time and budget
- Knowledge of state government contracting practices and procedures
- Knowledge of WVDNR practices and procedures
- Knowledge of small, seasonal water and wastewater system design in national parks
- Additional technical support from offices in Morgantown, Pittsburgh, and throughout North America

In summary, we believe that WVDNR should select a consultant who understands the project goals and objectives, from concept to commissioning, like Mott MacDonald. On behalf of our entire team, we thank you for your consideration and look forward to the opportunity to serve the West Virginia Division of Natural Resources and the State of West Virginia.

Sincerely,

Mott MacDonald, LLC

Stephen Polen, PE
Senior Vice President
412.497.2950
stephen.polen@mottmac.com

Gary Facemyer, PE, PS
Senior Associate and Principal Project Manager
304.356.3011
gary.facemyer@mottmac.com

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

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CHARLESTON WV 25305
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ENDOR

endor Name, Address and Telephone Number:

OR INFORMATION CONTACT THE BUYER

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

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

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Team qualifications

The Mott MacDonald team includes the very best technical and management staff, all dedicated to the successful delivery of the Cass Scenic Railroad State Park project. We understand WVDNRs need to select a consultant who will deliver the project on time, on budget, efficient, cost-effective and with the appropriate level of leadership and guidance. The team has experience with West Virginia state government contracting practices and procedures.

Mott MacDonald's staff has strong technical capabilities as well as clear understanding of all project phases, which enables the team to efficiently and cost-effectively execute the project to WVDNR's satisfaction. We look forward to collaborating with WVDNR staff to offer creative and reliable measures to provide town wastewater collection system improvements and treatment improvements at Cass Scenic Railroad State Park.

Gary Facemyer, PE, PS will provide overall project management. He has more than 40 years' of responsible charge of public works projects in West Virginia. He has served as Principal Project Manager and Project Engineer for various water, wastewater, site development, solid waste landfills, earthen dams, geotechnical investigations, abandoned mine reclamation projects, hazardous waste sites, and many other miscellaneous civil engineering projects. His duties have included project planning and design, managing construction bids and awards, construction oversight and inspection, and project closeout.

Eric Bess, GISP will assist Gary with schedule, budget, meetings, documentation, and data management. Eric has over 17 years' in GIS, data, and asset management experience across a broad range of sectors. He has served as Project Manager on various projects, including water, stormwater, GIS and asset management, data collection initiatives.

John Green is a Registered Professional Surveyor with over 30 years of experience in the engineering industry in surveying or survey related capacities and as an engineering design technician. He is expertly qualified in most conventional types of surveying and is also experienced in GPS surveying techniques. His specific project experience is primarily in transportation, site design and environmental infrastructure such as water and sewer system projects.

Kevin Garnes has almost 40 years of experience in the civil and architectural design field, including managing a CAD systems network and personnel with an extensive working knowledge of AutoCAD. He has been responsible for design, specifications, cost estimates, and quality control of construction documents for water and wastewater treatment plants, water storage tanks and distributions systems, sanitary sewer pump stations and collection systems, landfill design and permitting, bridge and highway design, right-of-way acquisition, and mining and reclamation plans.

Jennifer Miller, PE has more than 30 years of experience in various types of projects in the water, wastewater, highways, and petrochemical industries. She has been responsible for design, regulatory compliance, permitting, project management, and contract management. As a District Engineer for the West Virginia Bureau for Public Health, she inspected small wastewater systems under administrative order and offered recommendations to achieve compliance. She has designed small wastewater systems for hotels, camps, apartment complexes, subdivisions, industrial parks, schools, and various commercial clients in rural West Virginia.

Chris Henry, PE is experienced in wastewater engineering, construction oversight, and inspection over stream mitigation activities. His design experience includes pump station analysis, sewer rehabilitation and replacement, manhole rehabilitation and replacement, Inflow and Infiltration (I/I) removal analysis, and E&S controls. His additional experience also includes extensive environmental impact monitoring related to mining operations and their effects on hydrologic conditions, and NASSCO pipeline and manhole assessment.

David Mason, PE is an electrical engineer with experience in engineering production with proven success in client development. His background includes medium & low voltage power distribution, load flows, building & area lighting, control systems, SCADA, generators & utility paralleling, demand control, power factor correction, power transition systems, instrumentation systems, & electrical inspection.

Brandon Hodges has 20 years in the engineering and construction industries. Through a variety of projects and responsibilities, Mr. Hodges has continued an upward rise in the engineering field. Specializing in the utilities industry, he can perform a multitude of tasks in project management, from design and layout, to inspection and quality control testing. He has served as Resident Project Representative on many multi-million dollar projects, and has experience with client interface, site analysis, contracts, plan and code review, and all functions relative to construction administration from groundbreaking through project completion.

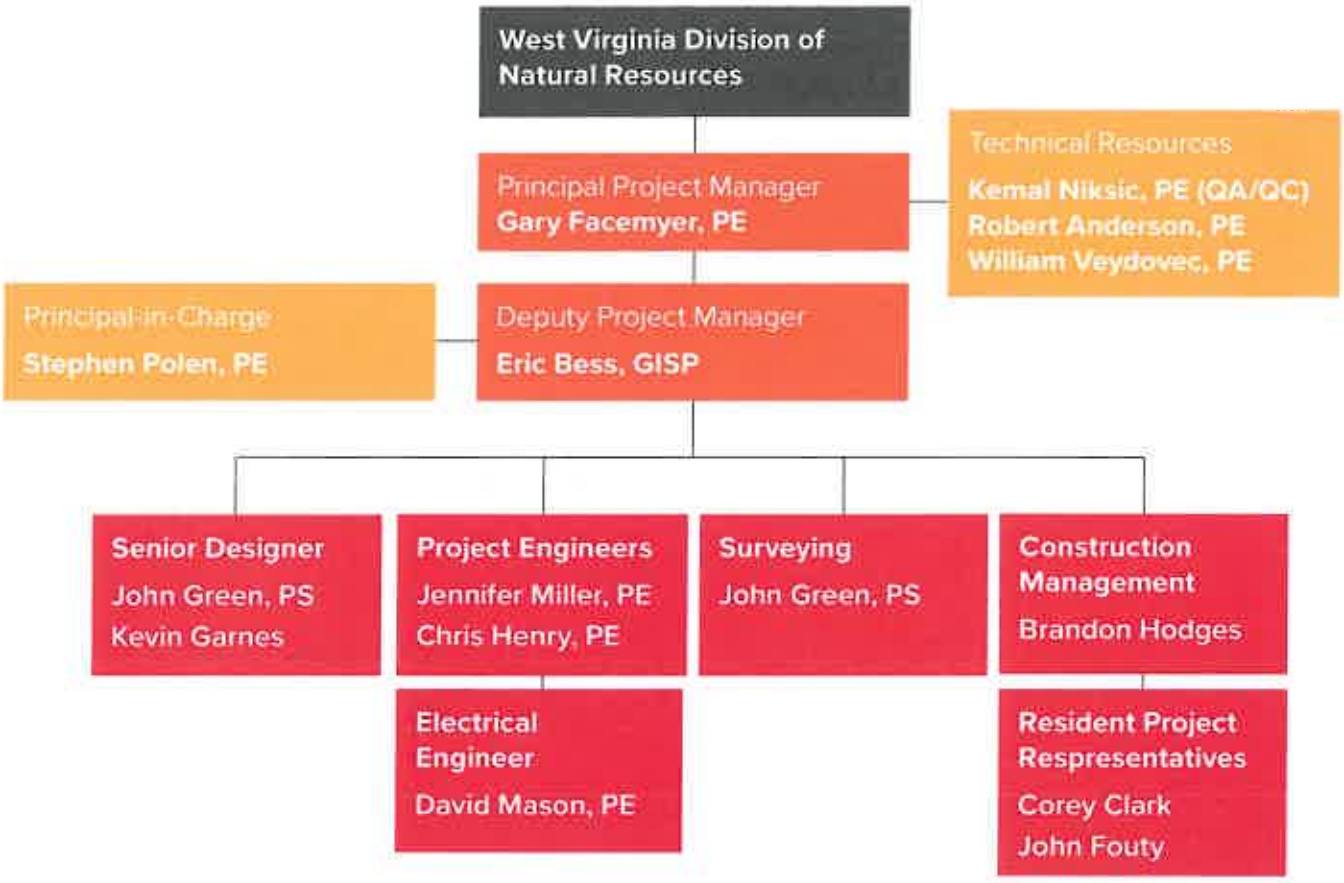
Corey Clark has three years of experience in the engineering and construction field. His experience includes field and lab testing of concrete, soil, and aggregates; inspection of precast and prestressed concrete members; and inspection and design of water utility pipes. His past responsibilities include quality control of both precast and prestressed concrete members, inspection of concrete members, training in inspection of concrete members, construction material testing in lab and in the field, and GPS location of utilities.

John Fouty has 27 years of experience in the engineering and surveying field. His surveying experience includes basic location work, topographic surveys, sub-division layout, and GPS experience in both control and location needs. He has valuable experience with customer relations and site analysis regarding utility installation, cost estimating, and construction. With Mott MacDonald, he works in a variety of capacities, providing site inspection, design proposals, cost estimates, logistics support, and property research, along with survey assistance and GPS location, when needed.

Technical resources include Kemal Niksic, PE (Quality Control Manager); and Robert Anderson, PE and William Veydovec, PE from our National Park Service practice.

Team organization

Our team will be led by a Charleston-based senior project principal and supported by highly experienced regional experts in all aspects of water and wastewater system rehabilitation. Our complete project team is reflected in our organization chart below. Detailed resumes of key staff members are also included.



Communication, schedule, and budget

Effective communication

Mott MacDonald believes communication is the key to a project's success. Open, frequent communication of project progress, beginning with the design through completion of the construction phase, enables the client to stay engaged and knowledgeable on the projects status and allows for client feedback at critical milestones to avoid duplicated efforts or re-work that can negatively impact a project's budget and/or schedule. At the onset of the project, Mott MacDonald will work with the client to identify the project stakeholders and communication parameters. Meeting agendas, topics, minutes, and action items will be documented and distributed to the stakeholders for review and acceptance to ensure everyone agrees and is unified in the understanding of the meeting topics and action item responsibilities. Any deviation from scope that may arise during the project will be documented and discussed with the client as to the deviation's impact to budget and schedule so the client is aware of these situations immediately.

Design reviews will be conducted at each stage of the design process; schematic design, design development, and construction documents. The schematic design phase will document the development of each project and its major components. This phase will include a project narrative that describes the Owner's goals and objectives; existing conditions; ecological, cultural, and environmental resources; legal/ regulatory approvals needed; description of proposed solutions, and basis of design. A site/landscape plan will be developed along with a construction cost estimate and project schedule. Owner will approvel the schematic design before progressing on to the design development phase. The design development phase is intended to further develop the project design with greater detail. At this stage, investigations will be made to establish the topographic, facilities and boundary information; ecological, cultural, and environmental resources to be protected; and the RF information all needed for the final design. Owner will approve the design development documents before progressing on to the final design phase. The development of final design, construction documents, bidding and contract documents will be reviewed at 30%, 60%, 90% and 100% to keep the Owner engaged throughout the project design.

Upon Owner approval of the bidding and contract documents, Mott MacDonald shall coordinate and cooperate with the Owner and WV Purchasing Division to facilitate the bidding process, including issuance of addenda, if necessary. Upon contract award, Mott MacDonald will provide construction phase engineering services, a full or part-time resident project representative, and commissioning services, if requested. Mott MacDonald will attend a pre-construction meeting, if requested. Construction phase services will include material submittal reviews, project site visits, written periodic reports on progress and quality of work, resolve field conflicts, prepare change orders for actual field conditions encountered, recommend approval of progress and final applications for payment and make final recommendations on acceptance of work.

Tools for Efficiency and Working Across Offices

Bentley ProjectWise: Provides a platform for integration and collaboration of remote teams allowing them to function as a single project unit. The ProjectWise system is designed to work with complex linked or referenced engineering, GIS, CAD, and BIM content. The system allows project work to be fully managed and available to project contributors without the traditional delays or format changes that can cause errors and slow production schedules. ProjectWise allows project teams to review, perform quality control, administer redline documents, and manage all project files and content between office locations electronically without the need to ever remove files or content from the system.

Microsoft 365 with Skype: Mott MacDonald invested in a major technology upgrade to our IT systems and bandwidth at all offices over the past 12 months that included the deployment of Microsoft Office 365 communication software. This software, which incorporates Skype and is integrated with Microsoft Outlook, combines contact management, email, telephones, instant messaging and presence technology, video conferencing, and internet-based meetings through laptop and desktop users, plus deployment to all popular mobile devices including iPads and Surface tablets in the field. This technology allows our project manager to know the status of all the team members and be able to contact and coordinate in real-time with everyone, hold impromptu meetings, share files and computer desktops with other Mott MacDonald professionals.

GoToMeeting: GoToMeeting is an online meeting, desktop sharing, and video conferencing software that enables Mott MacDonald to meet with our clients and subconsultants via the Internet in real-time.

BIM: Building Information Modeling (BIM) is an intelligent 3D model-based process that equips architecture, engineering, and construction professionals with the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure. Commonly our engineers will demonstrate their design in BIM to help the Client and Contractor visualize the work and ensure conflicts do not exist.

Ability to meet schedules and budget estimates

WVDNR requires services from qualified consulting firms to provide professional expertise for the various engineering components of the Cass Scenic Railroad State Park, Town Wastewater Collection System Improvements and Treatment Improvements project. These services will be identified by WVDNR; but likely include existing facilities analysis, repair design(s), and construction administration. When each task is scheduled, it is the expectation of WVDNR that the Mott MacDonald Team will be suitably staffed and available with experienced professionals who can meet the immediate needs of WVDNR.

This Mott MacDonald team has completed dozens of like projects. We are also familiar with WVDNR's project delivery requirements and have developed processes and procedures to effectively deliver the required services on time and with a high degree of success. To meet your expectations, Mott MacDonald has assembled a team with the management skills and expertise needed to address this project effectively. Each team member brings specific, direct and pertinent experience as well as an in-depth understanding of working with fish hatchery repairs.

The Mott MacDonald Team's plan for conducting and providing the services requested by WVDNR involves both managerial and technical competency and processes. These include:

- An efficient organization structure that is responsive and flexible to client requests
- Experience in management of facilities for federal, state, and local government entities
- Effective assignment implementation plan
- Unequaled knowledge of the project requirements
- Ability to deliver deadlines
- Meet or exceed the WVDNR's project objectives on time and on budget, within established funding parameters
- Superior technical expertise
- An emphasis on stakeholder consultation and communication
- Maintain comprehensive, in-depth reporting on all elements of an assignment
- Integral quality control / quality assurance plan
- Commitment to delivering value to WVDNR

The elements identified above are addressed herein and in the sections that follow to demonstrate our understanding of this project assignment.

Staffing structure to meet schedules

The Mott MacDonald Team's organizational structure is designed to be flexible and is tailored to be responsive to WVDNR's specific requirements at each unique site location and for each assigned design task. Expert leadership is available in depth for all technical disciplines identified under this solicitation. These resources will be quickly mobilized and assigned to efficiently complete each task and maintain the project schedule. The Mott MacDonald Project Manager will assign the requisite resources for an assignment to control scope, schedule, budgets and perform quality assurance on all project deliverables. This Mott MacDonald team provides the following:

- A team of managers, architects, and engineers who have knowledge of the WVDNR's standards and procedures, and who will apply this knowledge to the project.
- Responsiveness to keep the project on-schedule.
- A project organization that provides dedicated teams for the various tasks to allow for multiple deliverables to be performed simultaneously.
- A compact team that can provide 100% of all A/E services.
- Thorough knowledge of the tasks expected within the project scope.
- A quality control / quality assurance plan that allows review of all deliverables of varying size and complexity.
- Cost estimating and scheduling capabilities that focuses on the unique construction environment at each site location and affords this focus on both a general and detailed level.

It is mandatory that projects be executed in a timely manner, within budget, and delivered seamlessly with no surprises. This will be accomplished with an active risk management program through design and construction and using our proven management and quality assurance techniques. A successful project requires a keen focus and excellent communications to assure smooth and efficient operations. The Mott MacDonald team realizes effective collaboration with WVDNR's Project Manager will be crucial. Hallmarks for each deliverable will be constructability, safety, security and added-value while minimizing inconvenience to the local residents and traveling public. This Team will endeavor to exceed WVDNR's expectations for sustainability by incorporating a high degree of sustainable design and construction practices.

Our approach to a project's undertaking is to provide ample client review opportunities, so that WVDNR's project management team fully understands the project approach, relevant criteria and sees project progression many times during its development. This affords two-way dialog between the project and client leading to active comment and suggestion incorporation as the project develops. This collaborative effort strengthens initial concepts and leads to comprehensive and well thought out work products.

Effective communication

A critical component of a successful project is to ensure that all participants work to the same plan. This project will include a specific Project Plan of Work (PPW) that is a key part of our project control and quality management system and includes sections on contacts, communication protocols, reporting, task assigned individuals, scope, budget, schedule, work breakdown structure, deliverables and specific project criteria. The PPW will be updated during the course of the assignment to incorporate any changes as necessary. The purpose of the PPW is to ensure that all project participants have a clear understanding of the assignment goals before any work begins and enables Mott MacDonald to best utilize the skills of its staff and identify if any additional resources are required.

Regular internal meetings, monitoring progress and corrective actions, will be held to maintain the schedule, and we will keep WVDNR informed of the status of the assignment to enable WVDNR to maintain control of the decision-making process.

The Mott MacDonald Team Project Manager, Gary Facemyer, PE will be responsible for overall Contract Management, ensuring the team meets its commitments for the project and would be the direct point of contact for assigned tasks. Gary will lead the effort and be supported by the various discipline experts to complete specific work required under the contract. Gary will assure that each task has appropriate levels of support and resources for successful completion of assignments. Gary will communicate regularly with the WVDNR Project Manager to assure work is progressing in a manner that meets or exceeds expectations.

This team approach has worked effectively to manage Mott MacDonald's previous experience with similar projects and has taught us that the availability of qualified technical and support staff is essential to effectively serve clients. Having a diverse breadth of staff both locally and corporate-wide, affords flexibility to assign the appropriate technical staff.

Implementing proven budgeting and scheduling solutions

The key to on-time and on-budget performance lies in successfully combining the scope/deliverables, budget and schedule, into a Work Breakdown Structure (WBS), However, as we have experienced on previous projects, we must also continuously communicate with WVDNR as the work is executed and collectively agree to adjust scope and schedule as necessary to deal with unanticipated conditions or events. We believe it far more important to deliver the right project rather than meet a schedule but for the wrong project. The WBS is critical to the successful execution of the project as it establishes what is to be done, who is to do it, how / who will check it, when it will be done, and the budget for the work. Mott MacDonald's Business Management System includes policies on project execution and a suite of project control tools Gary will employ to control, responding to each project task with qualified and experienced staff and produce quality work products delivered on time and within budget.

Gary will be responsible for preparing and administering a Project-Specific Project Management Plan. He will use Mott MacDonald's proprietary Project Management Desktop for defining task budgets and real-time tracking of actual costs.

Each task schedule will be updated on a bi-weekly basis and submitted with monthly progress reports to WVDNR. All stakeholders will be kept informed on a timely basis with respect to the current progress, critical activities, potential delays, mitigation strategies, and corrective actions.

Any change to scope will be immediately assessed by the Mott MacDonald team to consider impacts on current and completed work and to determine the most effective way to integrate the additional scope into the current schedule. If schedule problems develop, our Project Manager will coordinate with our team to assess the problem and develop a revised schedule that all team members can buy into and move forward with to meet the project goals.

Mott MacDonald will use appropriate scheduling software (MS Project) to prepare and monitor the approved assignment schedule and resources. Weekly updates will be tracked to indicate adherence to assignment targets and also provide early warning of activities that are not in compliance with the schedule thereby enabling resource, budget, and scope decisions to be made.

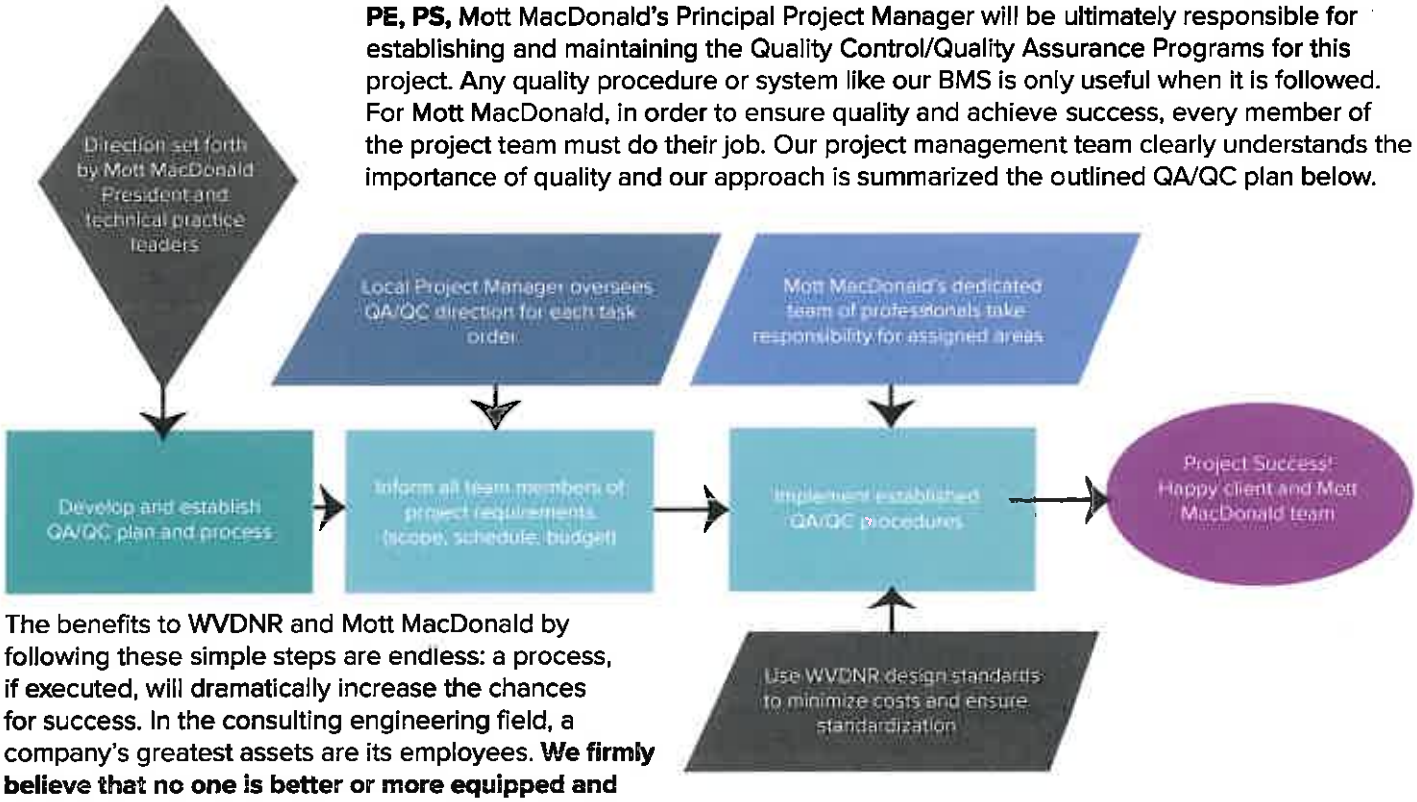
Quality assurance

The Mott MacDonald QA/QC goes beyond checking deliverables prior to submittal. It is a daily work ethic instilled into all of our managers, designers, and technicians.

We understand that WVDNR is making a major capital investment on this facility. As with any major purchase, buyers want the most for their money. They want quality, durability, reliability, and all for a fair and reasonable price. Regardless of size or scope, it will require close coordination between multidisciplines, designers, and construction personnel under unique site characteristics. The Town Wastewater Collection System Improvements and Treatment Improvements at Cass Scenic Railroad State Park will require a plan to control quality – a plan that not only addresses quality of the design but also establishes a process to promote quality of conformance, and quality of performance.

Mott MacDonald's process to quality is based on a well-established process, called our Business Management System (BMS). As a part of our commitment to quality, Mott MacDonald submits our procedures to external assessments carried out by independent nationally accredited assessors. This assures an independent evaluation of our policies and procedures and substantiates Mott MacDonald as an ISO 9001 accredited firm. The ISO 9001 accreditation is an independently verified certification that Mott MacDonald has established a formal Quality-Assurance program and verifies that we actually follow those procedures. We have invested in this certification as a commitment to our clients that quality will be upheld throughout our work product.

Mott MacDonald and the entire project team are committed to providing WVDNR with the highest quality of services for this project. We take the approach that quality control begins even before the Notice to Proceed is issued. It begins once the Project Manager thoroughly understands the scope of services for the project, and then assigns and dedicates the very best personnel suited to the tasks that are required. **Gary Facemyer, PE, PS,** Mott MacDonald's Principal Project Manager will be ultimately responsible for establishing and maintaining the Quality Control/Quality Assurance Programs for this project. Any quality procedure or system like our BMS is only useful when it is followed. For Mott MacDonald, in order to ensure quality and achieve success, every member of the project team must do their job. Our project management team clearly understands the importance of quality and our approach is summarized the outlined QA/QC plan below.



The benefits to WVDNR and Mott MacDonald by following these simple steps are endless: a process, if executed, will dramatically increase the chances for success. In the consulting engineering field, a company's greatest assets are its employees. **We firmly believe that no one is better or more equipped and dedicated to providing you with quality projects and services than our local Project Manager.**

Approach and understanding

Goal/Objective 1

Review existing plans and conditions as well as the operation of the park and evaluate while communicating effectively with the owner to determine a plan that can be implemented in a manner that will minimize disruption to concurrent operation of the facility and meet all objectives.

Proposed Activities

1. Review existing plans, condition reports and operational procedures
2. Meet with WVDNR engineering and facility operations staff to determine a plan that will minimize disruption of existing operations, yet meet all objectives.
3. Develop a written plan to investigate the current situation and determine causes.
4. Prepare a report that recommends methods to rehabilitate structures and piping that meet WVDNR needs and objectives; and minimizes disruption to existing operations.

Goal/Objective 2

As a portion of this process outlined in Objective 1, provide all necessary services to design the facilities described in this EOI in a manner that is consistent with The Division of Natural Resources needs, objectives, current law, and current code; while following the plan to design and execute the project within the project budget.

Proposed Activities

1. Prepare preliminary design documents, including final design criteria, preliminary drawings, outline specifications, and written description of the project.
2. Present the project to engineering and operations staff for review and input into the final design.
3. Prepare opinion of probable total project cost and schedule for approval and make design adjustments, if needed.
4. Prepare construction drawings and specifications showing the required work.
5. Prepare opinion of probable total project cost and schedule based on the final design documents.

Goal/Objective 3

Provide Construction Contract Administration Services with competent professionals that ensures the project is constructed and functions as designed.

Proposed Activities

1. Assist WVDNR in drafting contract and procurement documents.
2. Attend pre-bid meeting to provide technical support.
3. Provide technical support during bid question period.
4. Serve as WVDNR's representative during construction:

- Manage the construction phase, including on-site inspections as client's engineer
- Manage the construction phase schedule(s) to minimize facility disruptions
- Confirm that materials meet specifications
- Oversee construction requirements
- Provide punch list to contractor based on the installation contract and site inspections
- Assure work meets the design and operational contract terms

Past performance

Competence in professional disciplines

Mott MacDonald's proposed team is comprised of seasoned and proven Charleston-based management supported by regional experts in the field of water and wastewater repair, renovation, and improvements to small, seasonal park facilities. The team has strong working relationships with both WVDNR and that State of West Virginia. We believe our bench strength is unmatched and that we are the best firm for this project. Below we have addressed our capabilities to provide the necessary services to complete this project on-time and on-budget. Backed by our proposed team are 2,300 Mott MacDonald professionals throughout the U.S. where we can pull additional expertise and support services as needed to ensure a successful delivery of these facilities.

Mott MacDonald Project Experience

Lift Station and Sewer Improvements - Title I, II, & III

Working with the National Park Service, Mott MacDonald provided predesign (Title I), Design (Title II) and Construction Phase Services (Title III) for lift station and sewer improvements at the Devils Postpile campground and staff housing area. Devils Postiple is located in the San Joaquin River Valley, adjacent to Mammoth Lakes, CA. The Monument was established to preserve and protect Devils Postpile columnar basalt formation and to provide access to the approximate 200,000 annual visitors.

The monument collection system consists of approximately 800 LF of 6-inch sewer serving comfort stations and staff housing, and a centralized lift station. Sewage is conveyed via an approximate 2,000 LF 3-inch forceman to a U.S. Forest Service main line for handling and treatment. Over a five-year period, Mott MacDonald designed and assisted with the implementation of phased improvements, including lining of the sewer system (CIPP), improving the lift station wet well with joint grout injection and replacement of the lift station pumping system.

During the predesign phase Mott MacDonald coordinated sewer video inspection services to evaluate improvement options and completed hydraulic calculations for the selection of the replacement submersible explosion proof pumps. As part of the lift station improvements, a lower high pressure portion of the forcemain was replaced. This area had experienced multiple breaks in recent years and was a maintenance nuisance for staff. The low grade SCH 40 PVC forcemain was replaced with HDPE DR 11 piping to protect against future failures.

Mott MacDonald prepared the construction drawings and technical specifications for all the collection system improvements. Mott MacDonald also worked with the Park during the construction phase managing weekly conference call meetings, reviewing shop drawings, completing a final punch list field walk through and preparation of as-built drawings.

The improvements were constructed on schedule in fall before the winter snows and is ready for use when the park reopens in spring.

Client
National Park Service

Location
Devils Postpile National Monument, CA

Services
Civil
Wastewater
Structural Engineering

Oak Bottom WWTP - Recirculating Filter - Title I & II

The National Park Service (NPS) contracted with Mott MacDonald to conduct preliminary design and design phase services for the Oak Bottom WWTP Project at Whiskeytown National Recreation Area (NRA), CA. The wastewater treatment plant serves approximately 130,000 annual visitors to the Oak Bottom Marina, and is subject to significant seasonal fluctuations from 6,000 gpd to 50,000 gpd. The original WWTP was a package fixed-film activated sludge treatment facility with sludge drying beds for solids handling. The effluent is stored in a local 1.0-million gallon (MG) above-ground steel tank, and is pumped and surface-applied to a 5-acre spray field in the summer.

So as to improve effluent quality and reduce maintenance requirements, Mott MacDonald evaluated treatment options to replace the existing package plant, culminating in design of the facility including permitting and approval from the California Regional Water Quality Control Board.

Working with Park Staff, three treatment improvement options were considered; Recirculating Textile Filter (RTF) System, Package Activated Sludge System, and a Membrane Bioreactor (MBR). Ultimately the RTF was selected due to the ease of operation, reliability, process flexibility and sustainability/energy conservation related to the treatment process. The new system included a buried septic tank, equalization storage, pump station, at-grade recirculating textile filter (RTF) module and new process building. With the septic tank addition, the sludge drying beds were removed and the available land was utilized for the construction of a new photovoltaic (PV) power system to help offset energy costs. Project construction totaled approximately $1M.

Client
National Park Service

Location
Whiskeytown National Recreation Area, CA

Services
Civil
Wastewater
Structural Engineering

Historic Chief's House On-Site System

The Chief's house at Point Reyes National Seashore was designated a Historic Landmark on December 20, 1989. It was determined that the septic and leach field system was failing and contaminating Drakes Bay.

Mott MacDonald design a new on-site system sized for the 3-bedroom house, with new septic tank, pumping station and mound disposal system located up gradient from the bay.

Working with the Park and Marin County Department of Environmental Health for permitting, Mott MacDonald designed the on-site wastewater system, including the coordination of the pump station and disposal field locations to avoid historic and cultural impacts.

Mott MacDonald coordinated the required geotechnical subsurface investigation and percolation testing. As per the County code, a reserved area was established for a second effluent distribution field if needed in the future.

Mott MacDonald provided the design hydraulic calculations for the required orifice squirt, flow distribution and the determination of the basal area. Mott MacDonald coordinated the design including site civil, wastewater process and structural floatation evaluation for the buried tanks.

Client
National Park Service

Location
Point Reyes National Seashore, CA

Services
Civil
Wastewater
Structural Engineering

Wolverton Water System – Title I & II

Mott MacDonald led a team to conduct Title I preliminary design and schematic design services, and Title II design services for the deteriorated Wolverton Water Distribution System at Sequoia National Park. The Park was created in 1890 to protect the giant trees and preserve the area for scenic and recreational value. So as to serve the over 1.8 million annual visitors, Sequoia has multiple small water systems for distinct areas, with the upper Wolverton area being the largest consisting of an integrated system serving Giant Forest, Sherman Tree, the Lodgepole Visitor Center and Wuksachi Village.

Client
National Park Service

Location
Sequoia Kings Canyon, CA

Services
Civil
Wastewater
Structural Engineering

Much of the old buried infrastructure at Giant Forest and the Silliman Creek raw water facilities remains in service today, and are thought to be at least 70 years old. The Lodgepole water system was developed independently from Wolverton, and consists of a water treatment plant, storage tank and distribution system which are about 50 years in age. With the development of new areas, such as the Wuksachi Village and Red Fir Maintenance Facilities, the Wolverton Water System was expanded and improved in the 1980's with the addition of a new Treatment Plant, distribution mains, water tanks at Wuksachi and an emergency interconnect to the Lodgepole system.

Over the past few years, portions of the integrated water system have been out of compliance with California Drinking Water Standards. Specifically, elevated trihalomethane (THM) levels have been recorded at Giant Forest, Wuksachi Village and Red Fir distribution systems. THMs are a carcinogen, which can be formed as the by-product of chlorine and dissolved organics. During the repair of older piping (specifically at Giant Forest) staff noted a considerable slime, or biofilm, layer on the interior of some piping, most likely contributing to the high THM levels. With the Title I Predesign effort, Mott MacDonald documented the system deficiencies, provide improvement options, developed hydraulic models, prepare Class "C" cost estimates and evaluated alternatives based on a life cycle costs and value matrixes. An additional key component of the Title I work was the development of a new well in the Giant Forest area. Collaborating with a local driller, Mott MacDonald and the Park coordinated the development of the 20 gpm well in an area comprised mostly granite formations. This new supply, in combination with main line replacements, is anticipated to reduce THMs by removing bio-film and decreasing water age in the Giant Forest system.

The preferred alternative included a variety of improvements, which were documented in a schematic design of; a mixed oxidant disinfection system (sustained chlorine residuals and biofilm destruction), miscellaneous piping improvements and replacements, pigging or pipe cleaning (biofilm removal), equipping a new well and new well house, tank cleaning and lining, new water system interconnects (reduced pressure), and the installation of a chorine dosing station for the remote Wuksachi area.

Supplemental services of surveying and bedrock investigations were also provided. A sub-consultant led this effort, providing over 6 acres of design topographic surveying, and coordinated the drilling of approximately 25 test holes along Generals Highway. The test holes were drilled to a depth of about 6 feet and logged, so as to determine bedrock depth along specific pipeline routes.

In combination with local Sequoia staff and the National Park Denver Service Center, Mott MacDonald proceeded with the Title II design effort. Mott MacDonald coordinated the preparation of the entire construction contract bid package, including all civil, process and structural disciplines. A subConsultant prepared the detailed design drawings and specifications for the electrical and control systems, integrating the improvements with the already established radio communication and SCADA system.

Lassen Water Treatment Plant – Title I, II & III

At the Lassen Volcanic National Park Headquarters in Mineral, CA, drinking water was previously supplied by a 23-year old, 72-gpm surface WTP. During heavy rain events, that tend to occur in the spring and fall, raw water turbidities in Martin Creek could exceed 300 ntu. These peak events frequently resulted in finished water turbidity violations, and State-ordered boiled water notices. In the Title I pre-design effort, Mott MacDonald led the evaluation of treatment alternatives that would allow the Park to consistently comply with State regulations, and to eliminate water quality related shutdowns. Ultimately, based on a detailed comparative matrix and life cycle cost value analysis, microfiltration was identified as the preferred treatment technology. We then moved into the design, Title II phase of the project and coordinated the required permitting through the State of California Department of Public Health.

We designed the new facility to maintain a small footprint in a sensitive environment and made sustainable use of the existing structures. Mott MacDonald worked closely with membrane manufacturers to identify a complete gravity-fed solution, minimizing power costs. The existing in-line filtration facility was upgraded to a two-skid, 90-gpm pressurized microfiltration facility with associated sodium hypochlorite disinfection, clean-in-place, maintenance wash, and waste neutralization systems. The new facility utilizes the elevated gravity raw water inlet pressures to feed raw water through the membranes and convey the finished water to the distribution water storage tank without pumping. With the microfiltration technology selection, the system also meets turbidity requirements without the addition of pretreatment chemicals. Mott MacDonald coordinated the preparation of detailed civil, process and structural drawings and specifications and managed sub-consultants in designing the electrical and control system. The final Class "A" estimate totaled $842,000.

The Park service proceeded to bid/negotiate the project as an 8(a) set aside, without success and change to an open competitive bid process, allowing for the successful selection of a contractor for the project construction within the approximate $930,000 budget. Mott MacDonald also provided Title III construction phase services providing responses to contractor questions, shop drawing reviews and change order negotiations.

Client
National Park Service

Location
Lassen Volcanic National Park, CA

Services
Civil
Wastewater
Structural Engineering

Lodgepole Lift Station – Title I Predesign & Title II Design

The National Park Service contracted with Mott MacDonald to conduct preliminary design and final design services for the Grant Grove and Clover Creek (Lodgepole and Wuksachi) Wastewater Collection Systems Rehabilitation Project at Sequoia and Kings Canyon National Parks.

The Grant Grove and Clover Creek wastewater collection systems, collectively, serve over one million visitors annually. The systems serve a variety of facilities including campgrounds, picnic areas, trailer villages, concessioner lodges, operation and maintenance buildings, employee housing, and visitor centers.

The collection systems are comprised of various piping materials and portions are in poor condition, contributing significantly to the amount of infiltration and inflow (I&I). As part of the overall project, Mott MacDonald evaluated and prepared improvement schemes for the collection system, consisting of pipe lining, segment replacement and manhole repair.

The Lodgepole collection system improvements were the key element of the project. The system included a gravity sewage pipe crossing under the Marble Fork of the Kaweah River. The pipe was in poor condition and had been damaged by rocks and debris in the River. Mott MacDonald evaluated improvement alternatives ultimately designing the Lodgepole Lift Station. The improvements included the rerouting of the Marble Fork sewer crossing to the local historic Generals Highway bridge, and consolidating the local sewage flow to a single lift station. Key elements of the lift station design include:

- Building architecture consistent with local National Park aesthetics
- Wetwell – Drywell configuration
- Drywell includes influent grinder, valves, forcemain discharge piping and flow meter.
- Stair access to drywell lower level piping for ease of maintenance.
- Wall isolation between wetwell and drywell areas, simplifying heating and ventilation requirements.
- Electrical and control components in drywell upper level
- Double leaf access hatch, hoist and double doors in wetwell area to facilitate pump removal.
- Two (2) pumps each rated at 200 gpm – 5 Hp – Expandable to 75 hp to meet future conditions
- Influent grinder to macerate debris and extend pump life – 3 Hp. Grinder includes emergency by-pass.
- Grinder removal via pick eye at stair access opening.
- Main Power and Back-up power originates from existing local source
- Flow monitoring – forcemain magnetic meter – instantaneous and flow totalizer.
- Controls – auto controls with localized PLC and remote monitoring at main SCADA computer.

Client
National Park Service

Location
Sequoia & Kings Canyon National Park, CA

Services
Civil
Wastewater
Structural Engineering

Grant Grove Water System Rehabilitation – Title I & II

Working with the National Park Service, Mott MacDonald provided predesign (Title I), Design (Title II) and Construction Phase Services (Title III) for the rehabilitation of the Grant Grove water system in Kings Canyon National Park. The Grant Grove water system produces about 9 million gallons of potable water annually, serving about 700,000 visitors, 20 permanent residents, 30 seasonal employees, Visitor Center, campgrounds, and lodge.

The water system consists of three raw water sources, with primary supply coming from a local artesian well. The raw water is corrosive and had been stabilized using a lime stone contactor. The treatment had become ineffective at meeting the California Department of Public Health copper limitations and in need of improvement. Per the Lead and Copper rule, action levels for copper (1.3 mg/L) and lead (0.015 mg/L) had been exceed in the distribution system. Based on tested Langelier Index (LI) and the Aggressive Index (AI) the raw water supply had been designated as aggressive.

During the predesign phase the water demands were confirmed and treatment alternatives were evaluated. Three options were reviewed and evaluated at a coordinated CBA (Choosing By Advantages) conference, with the preferred option being the removal of the lime stone contactor and replacement with a dry lime feeding system.

Mott MacDonald prepared the construction drawings for a new process building, dry lime feeder, and improvements to the artesian well head. The project was constructed on schedule and within the approximate $1.0 million funding limit.

Client
National Park Service

Location
Kings Canyon National Park, CA

Services
Civil
Water Engineering

MOTT MACDONALD

Gary Facemyer, PE, PS

Personal summary

Education:

BS, Civil Engineering, WV Institute of Technology, 1975

Registration:

Professional Engineer

KY, [redacted] 1995
OH, [redacted] 993
PA, [redacted] 1992
VA, [redacted], 1993
WV, [redacted] 1980

Professional Surveyor

WV, [redacted] 1995

Memberships:

American Society of Civil Engineers (ASCE) Fellow

American Water Works Association (AWWA)

Water Environment Federation (WEF)

WV Society of Professional Surveyors (WVSPS)

Mr. Facemyer has been responsible for planning, permitting, design, and construction of public works projects for 40 years. He has served as Principal Project Manager and Project Engineer for various water, wastewater, site development, solid waste landfills, earthen dams, geotechnical investigations, abandoned mine reclamation projects, hazardous waste sites, and many other miscellaneous civil engineering projects. His duties have included project planning and design, managing construction bids and awards, construction oversight and inspection, and project closeout. His responsibilities have included managing quality assurance/quality control, schedules, personnel, company resources, business/market development, clients, and profit.

Selected projects

Asset Field Locations, West Virginia American Water, Statewide, WV: Project Director for an ongoing project to field locate 160,000 water meter tiles using sub-foot GPS data collectors to implement a data management system and SAP/GIS integration. Manages and assists installation contractors to replace these meters with AMR/AMI technology.

Yeager Airport Facility Improvements, Charleston, WV: Project Manager for terminal and ramp improvements, consisting of new passenger boarding bridges, pre-conditioned air units, fixed ground power units, HVAC rooftop unit replacements, and electrical upgrades, including emergency power. Responsible for contract management and construction phase services, and project closeout with FAA.

Asset Data Management, West Virginia American Water, Statewide, WV: Project Director for an ongoing project to develop a GIS system that integrates with client's SAP enterprise resource management system. Responsible for office and field data collection, GPS field location of assets, reconciliation between systems, and asset data management.

Upper Kanawha Valley Water Main Reinforcement and Extension, West Virginia American Water, Kanawha County, WV: Principal Project Manager responsible for planning, design, permitting, bidding, and construction management of 15 miles of 20" and 16" ductile iron pipe, 1500 gpm water booster station, and one million gallon glass-fused-to-steel water storage tank to serve the communities of Pratt and Montgomery. Project includes an open cut crossing of the Kanawha River that impacted federally endangered mussels that had to be permitted and mitigated. Project allows the client to abandon two water treatment plants and serve the municipalities with reliable water from their regional water treatment plant.

Tank Painting, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for providing engineering and project management related to development, management, and implementation of an annual water storage tank painting program.

Geographic Information System (GIS) Conversion, West Virginia American Water, Statewide, WV: Client Manager responsible for converting client's CAD and paper maps to GIS format. Project consists of 9,500 hydrants, 50,000 valves, and 3,350 miles of water main.

Resident Project Representatives, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for furnishing and managing resident project inspectors for various capital improvement projects, primarily water distribution system renewal and replacement projects.

Technical Services, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for providing engineering, surveying, and GIS services to the client's Engineering Group for capital improvements to water distribution system renewal and replacement projects.

Stormwater Pollution Prevention Plans (SWPPP), City of Charleston, WV: Project Manager for 24 SWPPP and 10 site assessments for municipally-owned sites in the city. Responsible for resource planning, schedule compliance, final reporting, and certifications.

Water Storage Tank Demolition, West Virginia American Water, Statewide, WV: Project Manager/Engineer responsible for locating and evaluating 20 existing ground level and elevated, abandoned water storage tanks to be demolished; preparing bidding documents, assisting client in the bidding process and contract negotiations with Contractor; and miscellaneous construction administration services, land research, easements, and right-of-way services.

Potassium Permanganate Chemical Feed, West Virginia American Water Charleston, WV: Project Director responsible for design, permitting, bidding, and construction management of a standalone chemical feed building and equipment for an 80 MGD water treatment plant.

Fayette County Advanced Metering Construction Management, West Virginia American Water, Fayette County, WV: Project Director and Client Manager for construction phase engineering services; resident project representation; mapping services using GPS locations; and GIS mapping of meters, tanks, booster stations, pressure reducing valves, fire hydrants, and gate valves. Responsible for progress monitoring, data management, and data cleansing for the replacement of 12,000 water meters with "smart meter" technology and installation of 1,200 acoustical monitors for leak detection in this municipal system.

Water Storage Tank Rehabilitation, Town of Wayne, Wayne, WV: Project Manager/Project Engineer responsible for tank inspection, and developing plans and specifications to rehabilitate a 150,000-gallon ground supported welded steel water storage tank. Rehabilitation consisted of cleaning, sandblasting to near white, repairing pits, replacing the ladder/platform, replacing bolts/gaskets to manways/access hatches, and painting with a three-coat epoxy paint system. Paint inspection was provided by KTA-Tator, Pittsburgh, PA. Contract performed by Welding, Inc., Charleston, WV.

Water Storage Tank Rehabilitation, Town of Gilbert, Gilbert, WV: Project Manager/Project Engineer responsible for tank inspection, and developing plans and specifications to rehabilitate two 100,000-gallon ground supported welded steel water storage tanks. Rehabilitation for Tank No. 1 consisted of complete demolition and construction of a new welded steel water storage tank on the existing foundation. Rehabilitation for Tank No. 2 consisted of cleaning, sandblasting to near white, repairing pits, replacing the ladder/platform, and replacing bolts/gaskets to manways/access hatches. Both tanks were painted with a three-coat epoxy paint system. The work also included replacement of the yard piping system, including replacing valves to create a more flexible piping system to isolate and drain the twin tanks, fencing, and telemetry. Paint inspection was provided by KTA-Tator, Pittsburgh, PA. Contract performed by Welding, Inc., Charleston, WV. Telemetry contract performed by Patriot Services, Parkersburg, WV.

Slabtown, Tamcliff, Paynter Water Main Extension, Town of Gilbert, Gilbert, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project for the Town of Gilbert. The project was funded by the USDA/Rural Utilities Service and HUD/Small Cities Block grant.

Water Storage Tank New Installations, West Virginia American Water, Statewide, WV: Project Manager/Project Engineer responsible for ten or more ground supported welded steel water storage tanks. Duties included planning, design, permitting, bidding, construction management, and inspection. Paint inspection provided by KTA-Tator, Pittsburgh, PA. Welding, Inc., Charleston, WV was the successful low bidder on all tanks.

Upper Fishers Branch Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project is being funded by the KCC, US Army Corps of Engineers, IJDC grant, and WV American Water.

Sanderson/Dutch Ridge Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project is being funded by the KCC, WVDEP/Abandoned Mine and Reclamation Program, and WV American Water.

Back Fork of Elk, Miller Mountain Phases I & II, Diana Phase I Water Main Extensions, Webster County Economic Development Authority, Webster County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and bid phase engineering services for a water main extension project in cooperation with the Webster County Commission, Webster County Economic Development Authority, and West Virginia American Water Company. The project is being funded by the WVDEP/Abandoned Mine and Reclamation Program and WV American Water.

Putnam County (Six Areas) Water Main Extensions, Putnam County Building Commission, Putnam County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Putnam County Commission, Putnam County Building Commission, and West Virginia American Water Company. The project was funded by the Putnam County Commission, Infrastructure and Jobs Development Council (IJDC), and WV American Water.

Putnam County Master Plan, Putnam County Building Commission, Putnam County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects are funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Cabell County (Six Areas) Water Main Extension, Salt Rock Public Service District, Cabell County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of water main extension projects in cooperation with the Cabell County Commission and West Virginia American Water Company. The projects were funded by the Infrastructure and Jobs Development Council (IJDC), HUD/SCBG, and WV American Water.

Cabell County Master Plan, Salt Rock Public Service District, Cabell County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects have been and will be funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Kanawha County Master Plan, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects have been and will be funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Public Water Distribution, Pumping and Storage Projects, West Virginia American Water Statewide, WV: Responsible for planning, design, permitting, construction management, and construction of numerous public water system projects over a 25 year period. Projects included water main extensions, replacements and reinforcements, pumping stations, pressure reducing stations, and water storage tanks. Responsibilities included grant and loan funding applications and strategy for securing the necessary funding.

Upper Winifrede Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and construction of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project was funded by the KCC, WVDEP/Abandoned Mine and Reclamation Program, and WV American Water.

Wills Creek, Frame, Upper Frame Phase I & II, Bufflick, Pond Gap, Witcher Creek, Tuppers Creek, Doctors Creek, Derricks Creek, Grapevine Road, Sigmon Fork, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and construction of water main extension projects in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. These projects were funded by various local, state, and federal grants and loans; and WV American Water.

Water Main Extension Projects - Putnam County, Cabell County, Kanawha County and Boone County, West Virginia American Water, Various Counties, WV: Lead Consultant for these $82 million water main extension projects in these counties. Project Manager/Project Engineer responsible for planning, permitting, design, and construction of various water main extensions within these county-wide water main extension projects. (Numerous other consultants were selected to perform similar services throughout these counties). As Lead Consultant, responsible for uniform bidding and contract documents, uniform reporting, contractor invoicing, and overall construction management for WV American Water. These projects were funded by various local, state, and federal grants and loans, and WV American Water.

MOTT MACDONALD

Eric R. Bess, GISP

Personal summary

Education:

BS, Engineering Technology, West Virginia University, Institute of Technology, 1996

AS, Civil Engineering Technology, West Virginia University, Institute of Technology, 1995

Registrations:

NICET Certified Civil Engineering Technician, [redacted]

Certified Geographic Information Systems Professional (GISP)

Professional memberships:

Member of American Water Works Association (AWWA)

American Society of Certified Engineering Technicians (ASCET)

West Virginia Association of Geographic Professionals (WVAGP)

Mr. Bess has over 17 years of GIS experience, mostly in the Oil & Gas Industry. His range of experience covers a multitude of tasks including database development, workflow and dataflow process management, training, analysis, asset management, and field personnel management. Prior to this, Mr. Bess worked for five years in the coal industry, which also aided in a coal relations GIS support role. He has experience with data creation, compilation, reporting and analysis, and QA/QC of various datasets for business needs.

His mining experience includes a wide range of tasks from traveling with inspectors, to ensuring tools and parts for daily and planned maintenance activity, to traveling with surveyors underground to ensure proper mining direction and location are correct. He also assisted with permitting, mine projection development, ventilation review, and managed the water treatment systems for the bath houses, including ordering and management of the systems and chemicals and reporting requirements for state agencies. He also performed on-site IT support and human resource functions, as needed, for a union workforce of over 200 individuals.

Selected projects

Water System Acquisition Due Diligence, West Virginia American Water Company, WV: Served as Senior GIS Specialist on this project. Client requested due diligence to be done on a smaller water system that may be acquired. Work consisted of creating a GIS linkage between a master easement spreadsheet and parcel outlines in GIS. Assets were digitized from scans that were georeferenced, and buffer calculations performed based on the easement criteria to make a map book of the coverage area with various information displayed.

AMR/AMI Phase I, II, West Virginia American Water Company, WV: Project Manager and Senior GIS Specialist involved in field data collection with sub-foot GPS for a client program to replace probe and manual read meters with AMR/AMI read systems. Responsible for field crew coordination, deliverables for 3rd party contractors who performed the meter change-outs, and progress reporting. Also, the data was provided to the client as coordinates linked to each premise number for updating their master service address database.

Stormwater Surface Runoff Analysis, City of Huntington, Huntington, WV: Served as Senior GIS Specialist on this project involving digitization and data management for surface features in a small pilot area of the city. Responsible for GIS data acquisition and workflow development, proper data attribution for impervious vs. pervious areas, acreage calculation for runoff analysis, and map generation for client review.

Asset Data Management, West Virginia American Water Company, WV: Served as Senior GIS Specialist on this project consisting of data discovery, collection, process development, and integration to WVAW GIS System. Served as liaison with field operations to ensure field mark-ups of data were delivered and assimilated into the WVAW GIS System. Developed a field data collection process with GPS technology for more efficient collection and integration.

Impervious Surface Determination and Analysis Support, Huntington Stormwater Utility, Huntington, WV: Served as Senior GIS Specialist. Client indicated they would like assistance in determination of impervious area within city limits to then apply to their billing system to charge a stormwater runoff rate for commercial properties. Work consisted of providing technical support for client GIS personnel in how to train the software to classify the recently acquired imagery, how to take those results and intersect and calculate the impervious area per tax parcel, how to load the results into their billing system and also advise on a base disclaimer for review by the client's legal department to cover the work done prior to public release.

View shed Analysis, West Virginia American Water Company: Served as Senior GIS Specialist. Client requested due diligence to be done regarding view shed impact for potential timbering at a water treatment plant. Work consisted of creating a set of observation points, barrier of trees to remain and analysing the results using a 6ft tall person located at each observation point to show no negative impact resulting from the proposed timbering.

Upper Kanawha Valley Phase III, West Virginia American Water Company, Kanawha County, WV: Served as Senior GIS Specialist on this project consisting of multiple waterline extension and upgrade contracts. Responsibilities included managing project documentation, data acquisition, GPS data processing, one call design tickets and third party utility contact on project area for proper utility line marking, and crossing procedures and requirements.

Stormwater Pollution Prevention Plans (SWPPP), City of Charleston, Charleston, WV: Served as Senior GIS Specialist on this project involving 24 SWPPP plans and ten site assessments for 34 municipal sites owned by the City of Charleston. Responsible for template development, data management, and general location and site maps of all field inspection data.

Upper Kanawha Valley Phase II, West Virginia American Water Company, Kanawha County, WV: Served as Senior GIS Specialist on this project consisting of four waterline extension and upgrade contracts. Responsibilities included georeferencing legacy utility maps, one call design tickets and third party utility contact on project area for proper utility line marking, and crossing procedures and requirements.

Various Projects, Chesapeake Energy Corporation, Various Locations, United States:

- Right-of-Way Process and Mapping: Managed the efforts to standardize the GIS support processes and end products for Pipeline Right-of-Way (ROW). This project entailed working with IT and the ROW group to gain access to their ROW database, and working out a process for automated jobs to update the company's ROW GIS layer each night based upon the previous day's data at end of business. Standard mapping products were then created to relate to that layer with a specialized color code for each parcel status for an up to date view into the project and acquisition status along Pipeline projects in the major shale plays in the U.S. A separate web viewer was also developed with assistance from IT to give a digital view, as well as any hard copy needs the business may have.
- Pipeline Integrity Support (Class Analysis and Review with Operations): As part of the Pipeline Integrity group's role, they would utilize the GIS dataset for pipeline and associated facilities to process in their class location study tools. Once that result was obtained, they would be taken to the field operations and management personnel, with GIS as a liaison to review the results and provide explanation, or take down concerns for possible misidentification needing remediated prior to agency submission. With PHMSA's allowance of the clustering rule, this became an important role in helping reduce the amount of regulated mileage, thereby resulting in lower requirements, man hours, and patrols, and maintenance based upon the pipelines lower class ratings from proper analysis.
- Coordination of IT GIS Efforts with Business Needs for Solution Development and Acceptance: Performed periodic meetings with business leads to determine their goals and how GIS could assist or enhance their goals and outcomes. In doing so, with any web application needed, model or script development, business systems tie-in, or third party solution coordination with other systems, Mr. Bess would work closely with the IT group to ensure all business needs were met on implementation and any final tuning of the solution was done to provide the necessary outcome and product for the business use.
- One Call and Damage Prevention Program Support: GIS was integral in the one call responsibilities of the company. As the results of the GPS'ing of the assets occurred, the company's assets were becoming more spatially accurate, and allowing one call buffer submittals to state agencies to get more accurate, thereby providing more accurate ticket issuance from each state, and allowed for more internal personnel to clear tickets from the office knowing the status of the asset location information. GIS was responsible for data submittal to each agency, and worked with the one call ticket software company to enhance their product for our field personnel needs to enhance their user interface and streamline their work flows for more efficient damage prevention efforts.
- Hyperlinking of Related Documents, Photos, etc. to GIS Features: Performed data gathering and hyperlinking of file paths with the GIS feature classes to external and varied format data sources, so all information could be accessed from the GIS feature or portal without have to search multiple locations for similar data. Drawings, photos, etc. were hyperlinked in the GIS features attribute table so the end user could click the URL and be taken to the secondary source with minimal effort. This consolidated lots of information into a single accessible location for non-GIS centric personnel to utilize easily and efficiently.
- Training and Support for In-house Created Web Application Serving Up Company Pipeline and Facility Data to Internal Non-GIS Centric Users: Performed training and liaison for enhancement requests on internal web applications developed for non-GIS centric users. Assisted with front end development for process and user interface review, to then coordinate with test groups to provide further feedback to IT prior to final rollout. Training was provided upon rollout and again as requested by management to ensure comfort with the solution and the non-GIS centric end users for accessibility and understanding.

of three existing 1,500 hp pumps with new 2,000 hp pumps; upgrade of pump station power supply and distribution equipment from 5 kV to 13.8 kV; replacement of elevator controls; upgrade of station HVAC equipment; pump discharge piping rehabilitation; replacement of existing drain pumps; rehabilitation of bilge pumping system; design of effluent and potable water improvements; and new pump discharge air/vacuum breaking mechanisms.

General Facility Design Support, Confidential Client, Pittsburgh, PA: Project Director for Site investigations, designs, cost estimating, and construction phase services for general plant-wide facility designs. Projects included: revision of historic as-built drawings; engineering support and generation of new drawings for facility and site utility maintenance projects; field measurements for renovations; preparation of construction cost estimates for facility work; site inspection and surveys of utility system upgrades; review, development, and upgrade of standard specification and design criteria; preparation of Sustainable Design Reports; floor load and similar structural evaluations; hydraulic calculations for sprinkler systems; minor design evaluations; and analysis of LEED qualifications for future buildings.

New Laboratory Test Facility Rearrangement and Utility Extension, Conceptual and Final Design, Confidential Client, Pittsburgh, PA: Project Director for site investigations, geotechnical investigations, conceptual and final design, and construction phase services for the demolition of equipment, utilities, and structural infrastructure associated with a completed test program, and construction of foundations, structural framing, four (4) levels of new work platforms, test stands, mechanical and process equipment and piping, new utility extensions of potable and testing process waters (cooling, chilled, high temperature, high pressure), and new lighting, power supply and distribution, process controls, and instrumentation hardware within a renovated 5,000 square foot high-bay laboratory space. Conceptual and final design documentation included design and construction drawings, specifications, cost estimate, design and construction schedules, design narrative, and calculations.

Engineering Support to Review Vendor's Design of Specialized Simulation Training Facilities, Confidential Client, Pittsburgh, PA: Reviewed vendor's design submittals for the design, off site modular manufacture, shipping, assembly, and final installation of specialized simulation training facilities. Reviewed submittals to confirm vendor performance in accordance with scope of work, as well as verification of completeness, accuracy, constructability, and code compliance. Special evaluation of seismic support structures; catwalk support structures providing normal and emergency ingress/egress; ancillary mechanical rooms; electrical, lighting, data, and communications interconnections; support systems (water, sanitary, HVAC, mechanical, fire suppression) design and interconnections; and full review of the four-level (stackable) modular training assemblies.

Electrical Distribution System Replacement and Power Generator Upgrade, MSANK WWTP, New Kensington, PA: Project Director and Client Contact for site investigations, detailed design, construction phase services for the replacement of the complete Wastewater Treatment Plant electrical distribution system. Scope of work included upgrading from a single utility feeder to two new utility feeders that share the increased load plus an additional 50 percent capacity for future loads. Project also included installation of two new standby 1,200KW rated diesel generators, meeting EPA Teir-2 emissions regulations, and enclosed together in a walk-in weatherproof housing with sub-base fuel tank sized to provide 36 hours of run time at full load. Project scope included the installation of new pad mounted 2500KVA utility transformers, fed from separate utility primary feeder circuits, connected to new 480 volt, 4,000 Amp switchgear line-up. All new mains, ties, and feeder breakers were electrically operated and controllable via an operator interface terminal and a programmable logic controller (PLC) for monitoring by the WWTP facility's SCADA system, configured to alert operations staff of malfunctions. New switchgear was designed to accommodate a future third paralleled 1,250KW generator when future loads are increased at the MSANK Wastewater Treatment Plant.

Customer Service and Training Center Building, ALCOSAN Campus, Pittsburgh, PA: Special consultant for site investigations, design, and construction phase services for a new two-story, 20,000-sf building to provide accommodations for ALCOSAN's training functions, customer service operations, record storage, and parking facilities. This building was sustainably designed and received a LEED Gold rating.

MOTT MACDONALD

Kemal Niksic, PE

Personal summary

Education:

BS, Civil Engineering, University of Sarajevo, 1992

Registrations:

Professional Engineer

PA, [redacted] 2001

Professional memberships:

Water Environment Federation (WEF)

American Society of Civil Engineers (ASCE): Director of the Board, Pittsburgh Section (2010-2013)

Environmental Water Resources Institute (EWRI) Pittsburgh Chapter; Past Chair (2010-2012); Chair (2008-2010)

Mr. Niksic has over 20 years of engineering experience covering planning, design, and management of various projects. Mr. Niksic received his engineering degree from the University of Sarajevo and began his engineering career in his native country of Bosnia and Herzegovina. Since his arrival in the United States in 1995, he has been involved in all phases of project development and implementation on a variety of projects including planning and modeling of water supply systems, developing comprehensive wastewater planning documents (Combined Sewer Overflow Long Term Control Plans and Act 537 Sewage Facilities Plans), hydraulic characterizations for combined and sanitary sewer system, and engineering design and construction management of water and wastewater infrastructure, including water mains, sewer lines, storage tanks, pumping stations, and treatment facilities.

Selected projects

Main Pump Station Upgrade Project, Allegheny County Sanitary Authority (ALCOSAN), Allegheny County, PA: As part of a consultant team, responsible for design and project management of tasks associated with the upgrade of a 480 MGD Main Pump Station in Allegheny County. Participated in the selection and review of six-120 MGD pumps and served as Lead Designer for the improvements to the pump station ancillary systems, including replacement of existing drain pumps, rehabilitation of the bilge pumping system, design of pump discharge air/vacuum breaking mechanisms, effluent and potable water improvements, HVAC improvements, and system control integration.

Sewer Rehabilitation Project, Municipal Sanitary Authority of the City of New Kensington (MSANK), New Kensington, PA: Provided project management and design management for this project that includes CIPP lining of approximately 3,000 linear feet of 12-inch to24-inch diameter sewers and internal lining of 13 manholes throughout the system.

Upgrades to Days Inn and Linden Avenue Pumping Stations, Municipal Sanitary Authority of the City of New Kensington (MSANK), New Kensington, PA: Provided project management and design management for improvements to the Days Inn and Linden Avenue Pumping Stations in New Kensington. Work included structural and mechanical rehabilitation of the existing wet well, the construction of a new dry pit valve vault at the Days Inn Pump Station, and electrical improvements, SCADA integration, and system programming at both the Days Inn and Linden Avenue Pump Stations.

Phase I Long Term Control Plan, Municipal Sanitary Authority of the City of New Kensington (MSANK), New Kensington, PA: Responsible for development and implementation of a watershed based comprehensive Phase I Long Term Control Plan and sewer system characterization. The work included GPS surveys of 1700 manholes within the New Kensington system, documenting detailed manhole inspections and CCTV inspection of approximately 100,000 feet of sewers. Responsible for compiling similar information from four adjacent contributing municipalities, developing and implementing a public participation plan, and documenting compliance with the nine minimum controls as required by the EPA under an executed Administrative Order of Consent.

Effluent Flushing Water System Improvements, ALCOSAN, Pittsburgh, PA: Designed and provided project management services for the improvements to a 7,000 gallon per minute effluent water system at ALCOSAN's 200 MGD wastewater treatment plant. The improvements included pumping evaluation and optimization through the addition of VFDs, new automatic backwash strainers, surge protection and relief equipment, new chlorine effluent carrier valve station, and other equipment and instrumentation integration.

Confidential Client, Central Pennsylvania: Lead Designer for a 700 gpm water supply booster pump station for a natural gas extraction site. The pumping station utilizes two horizontal electrical submersible pumps, each capable of pumping 350 gpm at approximately 2,500 feet of head, two VFD's, influent storage/equalization tank, and surge protection system. The design also includes approximately ten miles of dual 6" Flexsteel force main and required appurtenances.

Erie WWTP Solids Handling Study, City of Erie, PA: Authored the "Dewatering Feed Sludge Pumping System Study" as part of a comprehensive solids handling study at a 20 mgd WWTP. The study included an evaluation and proposed improvements to the existing sludge pumping

equipment and conveyance system, constructability, and estimated cost of the proposed alternatives.

Improvements to Thermally Treated Sludge System (TTSS) at the Meadowbrook Water Pollution Control Plant, Franklin Township Municipal Sanitary Authority, Murrysville, PA: Designed and oversaw improvements to the operation of the existing TTSS at the six MGD Meadowbrook WPCP that resulted in production of exceptional quality Class A biosolids as documented by receipt of a DEP Permit for Class A biosolids disposal. The improvements also included rehabilitation of the co-generation system and automated its operation through the WPCP's SCADA system.

Improvements to the Combined Sewer Overflow System, Franklin Township Municipal Sanitary Authority, Murrysville, PA: Responsible for design of new combined sewer overflow structures in the Borough of Export. The structures are precast vaults with coarse screens, baffle walls for floatables capture weirs, and vortex valves for flow controls.

Biological Nutrient Removal (BNR) Wastewater Treatment Plant Improvements, Berkley Heights, NJ: Designed $4 million in improvements to the existing wastewater treatment plant to achieve BNR treatment requirements. Services included modifying existing treatment units to provide new anoxic zones, new slow-moving mechanical mixers, and major improvements to the plant's three anaerobic digesters. Improvements were also made to the EQ basin, site facilities, and other miscellaneous items.

Modifications to Sewage Treatment Plant, Phase 2, at the Department of Veterans Affairs Hudson Valley Health Care System, Castle Point, NY: Responsible for the design of improvements to the wastewater treatment at the VA's Castle Point facility. The design included rehabilitation of the existing trickling filters, sludge digestion improvements, heating and ventilating, internal flow pumping replacement, and additional miscellaneous improvements.

CSO Long Term Control Plan, Municipal Authority of the City of McKeesport, McKeesport, PA: Authored CSO long term control plan for the Authority's combined sewer system as required by the PA Department of Environmental Protection. Authored an Act 537 Plan for the Authority's WWTP including various alternatives for the elimination of sanitary sewer overflows, evaluation of the existing wastewater treatment plant capacity including solids handling facilities, and alternatives for the Authority's combined sewer system upgrade.

CSO By-Pass Facilities Design, Borough of Kane Authority, Kane Borough, PA: Designed and performed project management for the construction of Combined Sewer Overflow By-Pass facilities including concrete structures, flow controls, disinfection, and dechlorination system.

CSO Long Term Control Plan, Clairton Municipal Authority, Clairton, PA: Authored a CSO Long Term Control Plan for the Authority's combined sewer system as required by the PA Department of Environmental Protection. Developed a system-wide urban watershed management hydraulic/hydrology model utilizing EPA SWMM 5.0.

Project Management Oversight, Erie Water Works, Erie, PA: Designed and provided project management oversight, including the scheduling and monitoring of construction, for the following projects:

- Chlorine dioxide disinfection facility at the 32 MGD Chestnut Street water treatment plant; chlorine gas disinfection facility at the 56 MGD Sommerheim Water Treatment Plant.
- Fluoridation facility at the 32 MGD Chestnut Street and 56 MGD Sommerheim water treatment plants
- Installation of approximately 9,000 linear feet of underwater chemical feed lines at the intake in Lake Erie for the Sommerheim water treatment plant.
- Construction of the 3.5 MGD East Lake Road pump station in Erie, PA
- 15 MG Johnson Reservoir and 10 MG Sigsbee Reservoir upgrade
- 20 MGD Sigsbee Pump Station upgrade
- 45 MGD Sommerheim Water Treatment Plant Low Service Pumping Station

Authored system-wide "Erie Water Works Pumping and Storage Facilities Analysis" used to assess short and long term needs for the system's operation. Performed general project services for various water projects including the construction of new water lines, construction of the Station Road pump station, and construction of several elevated storage tanks. Other duties included the preparation of all required permits for construction projects, processing

periodic pay estimates, change orders, review of shop drawings, and other work associated with construction.

Watershed Management, Greater Greensburg Area Sewage Authority, Greensburg, PA: Developed a system-wide urban watershed management hydraulic/hydrology model utilizing EPA SWMM 5.0.

Salt Run Reservoir Dam, Emporium Water Company, Emporium, PA: Designed an overtopping protection upgrade of the Salt Run Reservoir Dam utilizing roller compacted concrete application.

Wastewater Treatment Plant Expansion, St. Mary's Municipal Authority, St. Mary's, PA: Designed and provided project management for an $11 million St. Mary's Wastewater Treatment Plant expansion. The work consisted of the construction of a new headworks building which houses two automated mechanical bar screens each with a capacity of 10 MGD, two aerated grit chambers and a pump station capable of pumping flows of up to 20 MGD; an influent splitter box, 12 MGD capacity sequential batch reactors, a new UV disinfection system, new aerobic digesters for treatment of the secondary sludge, modifications to the existing sludge handling process, new garage building, and additions and improvements to the existing operations building and treatment process.

Anaerobic Digesters Rehabilitation, St. Mary's Municipal Authority, St. Mary's, PA: Designed and provided project management for the rehabilitation of anaerobic digesters including cover rehabilitation, digestion gas equipment rehabilitation, and improvement to the existing sludge recirculation system.

Backwash Treatment Facility, Borough of Sewickley Water Authority, Sewickley, PA: Participated in the design of the backwash treatment facilities, green sand filters, and the framework of SCADA network. Designed a floating cover for the 1.0 million gallon Reservoir No. 4. Prepared detailed plans and specifications and served as Project Engineer.

Water System Facilities Audit, Williamsport Municipal Water Authority, Williamsport, PA: Co-author of water system facilities audit. The work included an analysis of the existing water system's facilities including treatment plant, pump stations and reservoirs, and recommendation for an upgrade necessary for a future interconnection into a unique SCADA control system. Co-authored "Lycoming Creek Well Field Utilization Study" to assess the existing conditions of the Authority's groundwater source, and prepared different options for future utilization to the well field.

Borough of Girard WWTP Upgrade, Borough of Girard, PA: Authored Corrective Action Plan, and developed a conceptual design plan for the Borough of Girard WWTP improvements. Participated and oversaw the design phase of the Borough of Girard WWTP upgrade.

Pedersen & Pedersen, Valencia, PA: Project Engineer responsible for design and inspection of various size sewers, preparation of erosion and sediment control plans, storm water management plans for various land development projects, design, inspection, and preparation of as-built drawings for cellular telephone antenna sites including self-guided towers, lattice towers, and design of on-site wastewater treatment facilities for individual units.

International Rescue Committee Sarajevo, Bosnia: Project Engineer/Project Manager on various infrastructure projects during the war in the City of Sarajevo, Bosnia, and Herzegovina. The list of projects, all of a critical nature, included the development of an alternative water supply for the City of Sarajevo, the construction of mobile package water treatment units, and expansion of the natural gas supply for the City, including the installation of more than 2,000 individual connections, and repair of 14 of the City's main central boiler houses which provided heat for over 60,000 people. Cooperated with and assisted other aid agencies throughout the war including UNHCR and USAID.

MOTT MACDONALD

Robert J. Anderson, PE

Personal summary

Education:

MS, Environmental Engineering, University of California, Davis, 1989

BS, Civil Engineering, Loyola Marymount University, 1987

Registrations:

Professional Engineer

CA [redacted], 2012
CO [redacted] 1993
ID [redacted] 2009
OR [redacted] 2012

Professional memberships:

American Society of Civil Engineers (ASCE)

American Public Works Association (APWA)

Rocky Mountain Water Environment Association (RMWEA)

Mr. Anderson has more than 25 years of engineering and project management experience with technical expertise that spans the range of water/wastewater treatment, hydraulic systems, master plans and engineering studies, design, detailed plans and specifications preparation, and construction management.

Mr. Anderson has considerable experience serving as lead Project Manager for a variety of water and wastewater treatment plant projects. Other project experience includes lift stations, booster pump stations, raw water pump stations, sewer collection systems, force mains, water transmission pipelines, water storage tanks, raw water/irrigation reservoirs, drainage and erosion control facilities, and raw water canal diversions.

Selected projects

Wawona Wastewater Treatment System Rehabilitation, National Park Service, Yosemite National Park, Mariposa County, CA: Project Manager. Predesign services to evaluate and establish proposed improvements to the existing Wawona Campground subsurface wastewater disposal systems replacing with low pressure pump system, upgrading the existing activated sludge WWTP to increase capacity including the development of a new solids handling building, and improvements to the spray irrigation facility and development of a subsurface disposal system. Helped manage a two-day value analysis conference identifying the campground lift station improvements and preferred disposal alternative.

Wolverton Water System Improvements Sequoia National Park, CA: Project Manager. Water system improvements project that addressed disinfection by-product problems at the far reaches of the water distribution system. This project included a new well supply at Pinewood/Giant Forest; replacement of several thousand feet of water main throughout the Park; mixed oxidant disinfection improvements at the Wolverton WTP; water storage tank improvements at Pinewood/Giant Forest; improvements at the Lodgepole WTP raw water diversion structure; interior cleaning of existing water mains (to remove biofilm); a chlorine residual dosing station at Wuksachi; and cleaning (pigging) of thousands of feet of existing water main to remove biofilm. Services during construction were provided for this project.

Headquarters Water Treatment Plant Upgrades, National Park Service Lassen Volcanic National Park, CA: Project Manager. Design of upgrades to the Park's Headquarters WTP. The existing pressurized sand filtration facility was upgraded to a pressurized microfiltration facility with associated clean-in-place, maintenance wash, and waste neutralization systems. This project included the use of high gravity feed pressures to push raw water through the membranes and up to the finished water storage tank without pumping. This project won a 2012 ACEC Honor Award at the annual awards competition.

Oak Bottom Wastewater Treatment Plant Improvements Whiskeytown National Recreation Area, CA: Project Manager. Preliminary & final design of replacement of the existing packaged activated sludge Oak Bottom Wastewater Treatment Plant (WWTP) with a new packaged recirculating textile filtration facility. The design included an evaluation of several treatment alternatives, coordination with regulatory agencies, equalization tanks, textile filter, process building, and repurposing of a drying bed area for PV installation.

Grant Grove Water System Rehabilitation Kings Canyon National Park, CA: Project Manager. Design of upgrades to the Park's Grant Grove WTP and associated raw water supply system. This project included treatment improvements, including replacement of a limestone contactor with a new dry lime feed system and metering pump, scissor lift and access platform for the dry lime feed system; new Mechanical Building, including pre-assembled concrete utility building and sodium hypo metering pump, electrical/controls equipment, and accessories; Artesian Well and 400-ft Well improvements, including sealing of well head, new well head enclosure, new electrical service stub out, and associated site improvements; and new 2-inch raw water line from the Artesian Well to the 200,000-gallon pressure break tank.

MOTT MACDONALD

William L. Veydovec, PE

Personal summary

Education:

MS, Environmental Engineering, University of Colorado, 1994

BS, Civil Engineering, University of Colorado, 1991

Registrations:

Professional Engineer

CO [redacted] 1998

WY [redacted] 2012

Professional memberships:

Water Environment Federation

Rocky Mountain Water Environment Association

Mr. Veydovec is a civil engineer with experience in all phases of water, wastewater, and reuse projects, including conceptual development, planning, permitting, design, construction administration, startup, and operations.

During his career, Mr. Veydovec has developed expertise in wastewater treatment facility planning, treatment process evaluation, and biological/chemical phosphorus removal.

Selected projects

Wastewater Treatment Plant Condition Assessments Sequoia and Kings Canyon National Park, CA: Senior Project Engineer. Condition assessments and upgrade recommendations to improve treatment efficiency were completed for the Ash Mountain, Grant Grove, and Clover Creek Wastewater Treatment Plants.

Flamingo Wastewater Treatment System Improvements Project, National Park Service, Everglades National Park, FL: Project Engineer for a treatment technologies evaluation and value analysis to upgrade the 100,000-gpd Flamingo Wastewater Treatment Plant to meet a low phosphorus effluent limit. The Flamingo WWTP treats wastewater generated by visitors to the Flamingo Bay area of Everglades National Park. The existing Flamingo WWTP could not reliably meet its existing nitrate-nitrogen effluent limit of 12 mg/L-N. The facility also faced a future effluent total phosphorus limit ranging of 0.01 mg/L-P (potential Everglades Forever Act limit) to 1.0 mg/L-P (Florida Best Available Technology limit). The project consisted of evaluating potential treatment technologies to meet the current nitrate limit as well as the upcoming phosphorus limit. The project also included an evaluation of disinfection technologies, including gas chlorine, liquid sodium hypochlorite, calcium hypochlorite, and UV disinfection.

El Portal Wastewater Treatment Plant Disinfection Study, National Park Service, Yosemite National Park, CA: Design engineer for the evaluation of options to replace the existing gas chlorination/dechlorination system at the El Portal Wastewater Treatment Plant. Process alternatives considered included gas chlorine/sulfur dioxide, liquid sodium hypochlorite/sodium bisulfite, liquid sodium hypochlorite/calcium thiosulfate, onsite sodium hypochlorite generation/sodium bisulfite, onsite mixed oxidant generation/sodium bisulfate, solid calcium hypochlorite/sodium bisulfate, and UV disinfection. Conversion to UV disinfection was recommended.

Cedar Grove Wastewater Effluent Electroconductivity Study, National Park Service, Sequoia/Kings Canyon National Park, CA: Project Engineer for evaluating the possible causes of the Cedar Grove Wastewater Treatment Facility's (WWTF) effluent exceeding its permitted effluent electroconductivity (EC) levels. The Cedar Grove WWTF treats wastewater collected from four large campgrounds located in the Cedar Grove area of Sequoia/Kings Canyon National Park. The Cedar Grove WWTF is a 55,000-gpd Recirculating Sand Filter (RSF) facility. Treated effluent is discharged to leach fields. One of the requirements of the facility's discharge permit is that the maximum conductivity of the effluent not exceed the source water electroconductivity plus 300 μmhos/cm. The Cedar Grove WWTF has been unable to consistently meet this requirement. The study identified RV dump stations as a large contributor to the wastewater EC. Additionally, the use of low-flow fixtures further contributed to wastewater with a relative high EC. Due to the high cost of treatment, the study recommended hauling of RV dump station wastes to a facility outside of the park, continued monitoring, and working with the California Regional Water Quality Board to relax the EC requirement due to site specific circumstances.

Brandy Creek Wastewater Treatment Plant Improvements Whiskeytown National Recreation Area, CA: Project Manager. Preliminary design, final design, and bidding services for a new 15,000 gpd recirculating sand filter wastewater treatment facility. The facility was located in forested area hidden from public view.

MOTT MACDONALD

John L. Green, PS

Personal summary

Education:

Civil Engineering (2 years), West Virginia Institute of Technology, 1975-1976

Registration:

Professional Surveyor

WV [redacted] 1991

Memberships:

West Virginia Society of Professional Surveyors

National Society of Professional Surveyors

CGIS/LIS Association

West Virginia Association of Geospatial Professionals

Mr. Green is a Registered Professional Surveyor with over 30 years of experience in the engineering industry in surveying or survey related capacities and as an engineering design technician. He is expertly qualified in most conventional types of surveying and is also experienced in GPS surveying techniques. His specific project experience is primarily in transportation, site design and environmental infrastructure such as water and sewer system projects.

Selected projects

Winona Abandoned Mine Lands (AML) Project, West Virginia Department of Environmental Protection (WVDEP), Fayette County, WV: Senior Designer responsible for all survey activities required to stake out the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data, plan preparation, grading design, and dissemination of data to the design team.

Trasher AML Project, WVDEP, Gilmer County, WV: Senior Designer responsible for all survey activities required to stakeout the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data and dissemination to the design team.

Barker Portals and Strip AML Project, WVDEP, Barbour County, WV: Senior Designer responsible for all survey activities required to stake out the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data and dissemination to the design team.

Marmet Bridge Monitoring Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV: Senior Designer responsible for high accuracy conventional survey services for I-64/I-77 bridge settlement monitoring project. Responsible for all survey activities required to establish high-stability conventional survey control and the installation of thirteen high accuracy survey targets on four separate bridges, including abutments, piers, and concrete slope monitoring monuments. High accuracy conventional surveys of the targets were repeated periodically for over a year to monitor the structures for movement in any direction. Duties also included reduction of survey data, preparation of a site plan, and survey data report submitted to the design team in the HNTB Scott Depot office after each monitoring survey visit.

Mile 24 Drainage Structure Survey, HNTB/West Virginia Parkways Authority, Mercer County, WV: Senior Designer responsible for mapping for analysis and design of drainage structure for I-77. Also responsible for all survey activities required for site mapping, including topography, existing structures, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Ghent Maintenance Facility Survey, HNTB/West Virginia Parkways Authority, Mercer County, WV: Senior Designer responsible for mapping for design of maintenance facility improvements. Responsible for all survey activities required for site mapping, including topography, existing structures, utilities, and controlled access right of way locations. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Beckley South Acquisition/Disposition Survey, HNTB/West Virginia Parkways Authority, Raleigh County, WV: Senior Designer responsible for property acquisition and property disposition at the WVPA Beckley South Maintenance facility. Responsible for all survey activities required for boundary surveys, including research, field surveys, and plat and legal description preparation. Duties also included coordination with the WV Parkways Authority's attorney and adjoining property owners to facilitate the project.

Sharon Retaining Wall Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV: Senior Designer responsible for mapping for analysis and design of a slide remediation project. Responsible for all surveys activities required for site mapping, including topography, existing structures, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Multiple Projects, West Virginia Turnpike, WV: Senior Designer responsible for all survey operations for all West Virginia Turnpike projects since 1996, including engineering design and boundary surveys.

State Police Building Site Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV Senior Designer responsible for site mapping for design of a new state police field office. Responsible for all surveys activities required for site mapping, including topography, existing structures, utilities, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Utica Shale Gas Well Pads, Chesapeake Energy Corporation, Carroll County, OH: Senior Designer responsible for complete design and plan preparation for three drilling pads for Utica Shale fracturing and gas extraction. Responsible for coordinating plan and design requirements with client, design and 3D modeling for plan preparation and quantity analyses, erosion and sediment control plans for regulatory compliance, quality control reviews of local Ohio surveyor to prepare plats for well permitting, and preparation of as-built record plans.

Upper Kanawha Valley Water Main Extensions Phase III, West Virginia American Water Company (WVAWC), Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Upper Kanawha Valley Water Main Extensions Phase II, WVAWC, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Bluefield North Water Main Reinforcements, WVAWC, Mercer County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Upper Kanawha Valley Water Main Extensions Phase I, WVAWC, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys (utility locations, profiles, cross sections for permitting purposes, etc.) and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Coalburg Water Main Extensions, Kanawha County Regional Development Authority, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Fayette Advanced Metering Infrastructure Project, WVAWC, Fayette County, WV: Senior Designer responsible for all GPS location surveys of water distribution system facilities in this project. The project involved the replacement of over 12,000 existing water meters with new meters and high-tech telemetry devices to facilitate a hands-free computerized meter reading/customer billing process. The project also had an operation and maintenance component which consisted of installing listening and telemetry devices on several thousand fire hydrants and valves for system performance monitoring and leak detection applications. Specific duties required were GPS location data collection, identification, data processing and distribution to the GIS team, and production of water meter location plans for use by the contractor during installation.

MOTT MACDONALD

Kevin D. Garnes

Personal summary

Education:

Various Engineering Classes, West Virginia State University, West Virginia University Institute of Technology 1982-1984

Mr. Garnes' has almost 40 years of experience in the civil and architectural design field, including managing a CAD systems network and personnel with an extensive working knowledge of AutoCAD. He has been responsible for design, specifications, cost estimates, and quality control of construction documents for water and wastewater treatment plants, water storage tanks and distributions systems, sanitary sewer pump stations and collection systems, landfill design and permitting, bridge and highway design, right-of-way acquisition, and mining and reclamation plans. His experience also includes commercial, industrial and residential building design, site design, stormwater hydrology and retention structures, and planning and development of industrial parks and subdivisions.

Selected projects

Coonskin Park Accessible Fishing Pier, Kanawha County, WV: Design layout, grading, retaining wall layout, pier design, utilities relocation, cost estimate, and site details.

West Virginia American Water On-Site Office Parking Expansion, Kanawha County, WV: Design layout, grading, drainage, retaining wall layout, and site details.

West Virginia American Water Off-Site Office Parking Lot, Kanawha County, WV: Design layout, grading, drainage, and site details.

Summit Bechtel Reserve Boy Scouts Facility, Fayette County, WV: Coordination of design between civil, landscape architects, mechanical engineers, and architects in the core area of the facility, including the utilities layout and design.

Bluefield Road Booster Station, West Virginia American Water, Mercer County, WV: Design layout for above ground package booster station to improve service through the Princeton area of the existing WV American system. Including property acquisition, site grading and drainage, foundation details, piping, WV DOT permit, cost estimates, material lists, details, and specifications.

Greenbrier Drive Water System Improvements, West Virginia American Water, Summers County: Design of approx. 4,400 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the area. Including permits, material lists, and details.

Mount Olive Road Extension, West Virginia American Water, Mercer County: Design of approx. 3,200 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the area. Including the identification of individual right of ways, material lists, and details.

Rich Fork Road Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 7,800 ft. of 12" ductile iron pipe transition mains, to reinforce water service to the Sissonville area. Including the WV DOT permit, stream crossing permits, cost estimates, identification of individual right of ways, material lists, details, and specifications.

39th Street Connection, West Virginia American Water, Kanawha County: Design of approx. 1,400 ft. of 16" ductile iron pipe transition mains, to reinforce water service in the Kanawha City area. Including the cost estimates, WV DOT permit, material lists, details, and specifications.

Chesterfield Avenue Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 7,900 ft. of 16" ductile iron pipe transition mains, to reinforce water service to the eastern Kanawha Valley area. Including the WV DOT permit, cost estimates, identification of individual right of ways, material lists, details, and specifications.

Bluefield Nursing Center Extension, West Virginia American Water, Mercer County: Design of approx. 645 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the new facility. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Eagle View #2 Water Storage Tank, West Virginia American Water, Kanawha County: Design of 157,000-gallon water storage tank, site grading, drainage, yard piping. Including cost estimates, material lists, details, and specifications.

Fayetteville 2nd Ave. Extension, West Virginia American Water, Fayette County: Design of approx. 3,600 ft. of 6" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Goose Run Extension, West Virginia American Water, Cabell County: Design of approx. 1,800 ft. of 6" PVC pipe distribution mains, to upgrade water service to the area. Including the identification of individual right of ways, stream crossing permit, WV DOT permit, cost estimates, material lists, details, and specifications.

Village of Rock Ridge Extension, West Virginia American Water, Summers County: Design of approx. 6,000 ft. of 6" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Route 60 Charleston Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 5,200 ft. of 20" ductile iron pipe transition mains to reinforce water service to the eastern Kanawha Valley area. Including the WV DOT permit, cost estimates, material lists, details, and specifications.

Melissa Road 2015 WV DOT Relocation, West Virginia American Water, Cabell County, WV: Relocation design of approx. 9,300 ft. of 12", 8" & 6" ductile iron pipe to avoid highway construction and maintain service to the area. Including identifying private right of ways, stream crossing permits, cost estimates, material lists, details, and specifications.

Hugheston Water Storage Tank, West Virginia American Water, Kanawha County: Design of 1,000,000-gallon water storage tank, installation of 954 ft. of 12" ductile iron pipe, site grading, drainage, road design, yard piping, and valve vaults. Including acquiring property, cost estimates, material lists, details, and specifications.

Riverside Relay Station, West Virginia American Water, Kanawha County, WV: Design layout for above ground package relay station to improve service through the Upper Kanawha Valley area of the existing WV American system. Including property acquisition, site grading and drainage, yard piping, WV DOT permit, cost estimates, material lists, details, and specifications.

Hughes Creek Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 5,600 ft. of 8" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Upper Kanawha Valley Extension Phase III, West Virginia American Water, Kanawha County: Design of approx. 31,200 ft. of 16" & 12" ductile iron pipe transition mains, to extend water service to the Montgomery area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Upper Kanawha Valley Extension Phase II, West Virginia American Water, Kanawha County: Design of approx. 17,900 ft. of 20" & 16" ductile iron pipe transition mains to extend water service to the eastern part of Kanawha County. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

WV Air National Guard Extension, West Virginia American Water, Kanawha County: Design of approx. 12,300 ft. of 16", 12" & 8" ductile iron pipe distribution mains, to extend water service to the WV Air National Guard at Yeager Airport. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Summit Bechtel Reserve Tanks, Boy Scouts of America, Fayette County: Design of one 2,000,000-gallon concrete water storage tank and one 6,000,000-gallon concrete water storage tank. Including yard piping, valve vaults, site grading and drainage, chlorine injection station, cost estimates, material lists, details, and specifications.

Leatherwood/Reamer Hill Extension, West Virginia American Water, Kanawha County: Design of approx. 68,100 ft. of 8" & 6" ductile iron pipe distribution mains to extend water service to the area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Potassium Permanganate Building, West Virginia American Water Treatment Plant, Kanawha County, WV: Responsible for building design and layout of chemical feed equipment for water treatment plant, including site plans and details.

MOTT MACDONALD

Jennifer J. Miller, PE

Personal summary

Education:

BS, Civil Engineering, University of Missouri-Rolla, 1985

Registrations:

Professional Engineer

VA [redacted] 2007
WV [redacted] 1992
MO [redacted] 1990

Ms. Miller has more than 30 years of experience in various types of projects in the water, wastewater, highways, and petrochemical industries. She has been responsible for design, regulatory compliance, permitting, project management, and contract management. As a District Engineer for the West Virginia Bureau for Public Health, she inspected small wastewater systems under administrative order and offered recommendations to achieve compliance. She has designed small wastewater systems for hotels, camps, apartment complexes, subdivisions, industrial parks, schools, and various commercial clients in rural West Virginia.

Selected design projects

Sewer Line Extensions:

Bungalow Woods Subdivision, Holden, WV
Pleasant View PSD, Pleasant View, WV
Washington Woods Estates, Ravenswood, WV
Town of Capels, WV

5000 gpd to 30,000 gpd Wastewater Treatment Systems:

Cardinal Land Co. Apartments, Elkview, WV
Cliffside Motor Inn, Harpers Ferry, WV
Songer Whitewater, Inc., Fayetteville, WV
Kinnamon Subdivision, Springfield, WV
Lick Creek Baptist Church, Ardel, WV
Living Generations Care Home, Stirrat, WV
Wayne Co. Community Center, Dunlow, WV
Hampshire Co. Industrial Park, Capon Bridge, WV
U. P. C. Youth Camp, Point Pleasant, WV
Woodville Senior Center, Woodville, WV

Sanitary Sewer & Storm Water Management for Land Development

Bible Center Church, Charleston, WV
Cabell County EMS Station #2, Huntington, WV
Winfield High School, Winfield, WV
Volcano Island Indoor Water Park, Fairmont, WV
Littlepage Terrace & Orchard Manor – Charleston Housing Authority, Charleston, WV
Washington Manor – Charleston Housing Authority, Charleston, WV
Southridge Centre Development F, Charleston, WV
University High School, Morgantown, WV

Wastewater Treatment Plant Rehabilitation & Collection System Improvements, City of Montgomery, Kanawha County, WV: Responsible for permitting and obtaining public funding for the wastewater treatment plant rehabilitation project.

Selected projects

Aspinwall Water Treatment Plant, Pittsburgh Water and Sewer Authority, Pittsburgh, PA: Project Manager, managing multiple capital projects for the Pittsburgh Water and Sewer Authority.

Ultra-Light Sulfur Gas Deconstruction/Reconstruction, Monroe Energy, Trainer, PA: Subcontracts Manager responsible for bidding, awarding, and managing all subcontracts through project completion. Also performed some site contract administrator responsibilities. This $180M project consisted of deconstructing an Ultra-Light Sulfur Gas Production Unit at the Sunoco Refinery in Marcus Hook, PA, transporting the unit's 25 modules to the adjacent Monroe Energy Refinery in Trainer, PA, then reconstructing the unit on the Monroe Energy site along with a new cooling tower and all necessary piping to allow for operation in the new space.

Crude Oil Flexibility Project, Husky Energy, Lima Refining Company, Lima, OH: Long Lead Engineered Equipment Buyer for the Husky Energy Lima Refining Company Crude Oil

Flexibility Project ($300M) in Lima, OH. Pre-qualified vendors (sourcing globally), developed procurement strategies, issued RFPs, evaluated proposals, and made recommendations to the client for award of purchase orders. Worked with project expeditors to facilitate delivery of the equipment and updated the project schedule.

Project Atlas, Marathon Petroleum LP, Findlay, OH: Business Process Owner for Project Atlas, a SAP ERP implementation facilitating procurement process, such as Purchase to Pay (P2P) and Source to Compliance, replacing 67 legacy applications for Marathon Petroleum Company (MPC). Specializing in SAP Sourcing and Contract Lifecycle Management (CLM). Acted as Subject Matter Expert representing MPC through the Blueprint, Realization, and Testing phases of the project.

Putnam County (Six Areas) Water Main Extensions, Putnam County Building Commission, Putnam County, WV: Project Engineer responsible for preliminary engineering, permitting, and obtaining public funding for a water main extension project in cooperation with the Putnam County Commission, Putnam County Building Commission, and West Virginia American Water Company. The project was funded by the Putnam County Commission, Infrastructure and Jobs Development Council (IJDC), and WV American Water.

Cabell County (Six Areas) Water Main Extension, Salt Rock Public Service District, Cabell County, WV: Project Engineer responsible for preliminary engineering, permitting, and obtaining public funding for water main extension projects in cooperation with the Cabell County Commission and West Virginia American Water Company. The projects were funded by the Infrastructure and Jobs Development Council (IJDC), HUD/SCBG, and WV American Water.

Upper Frame Phase II Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Engineer responsible for preliminary engineering, permitting and obtaining public funding for the water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. This project was funded by the Infrastructure and Jobs Development Council (IJDC), HUD/SCBG, and WV American Water.

MOTT MACDONALD

Christopher Henry, PE

Personal summary

Education:

BS, Agricultural and Biological Engineering (ABE), Penn State University, 2007

Minor Environmental Engineering, Penn State University 2007

Registrations:

Professional Engineer PA [redacted] 2015

NASSCO PACP,MACP, and LACP, U-1110-11705, 2014

NASSCO ITCP

CIPP-916-02001879, 2016

Mr. Henry is experienced in wastewater engineering, construction oversight, and inspection over stream mitigation activities. His design experience includes pump station analysis design, sewer rehabilitation and replacement, manhole rehabilitation and replacement, Inflow and Infiltration (I/I) removal analysis, and E&S controls. His additional experience also includes extensive environmental impact monitoring related to mining operations and their effects on hydrologic conditions, and NASSCO pipeline and manhole assessment.

Selected projects

Digester Facilities Upgrade Project, Municipal Sanitary Authority of the City of New Kensington (MSANK), New Kensington, PA: Design Engineer responsible for preparing bid drawings and specifications for the installation of new digester level sensing equipment. This project includes the development of a safety plan for the opening of a live anaerobic digester for equipment installation and the incorporation of new isolation valves to facilitate any future digester system work.

Green Infrastructure Third Avenue Rain Garden Project, MSANK, New Kensington, PA: Design Engineer responsible for preparing bid drawings and specifications for the installation of a modular underground stormwater infiltration basin. This project was the first green infrastructure project required by the Authority's LTCP. Public stormwater grant funding was identified and acquired for the client as the primary funding source of this project.

CSO Floatable Controls Project, MSANK, New Kensington, PA: Project Manager and design engineer responsible for the design to retrofit four existing CSO structures with solids and floatable control devices. The project incorporated baffles into the CSO structures to meet the guidelines of the EPA's CSO Guidance for Nine Minimum Controls

Little Pucketa Interceptor Inflow and Infiltration Removal Project, Lower Burrell Municipal Authority (LBMA), Lower Burrell, PA: Project Engineer responsible for the assessment of sanitary flow meter and CCTV data, and preparation of a corrective action plan. This project is part of the first phase of LBMA's Long Term Control Plan to remove excessive I/I into their separate sanitary collection system. This project includes the installation of cured in-place pipe lining of approximately 36,000 feet of eight-inch sanitary pipe, cementitious manhole lining, cured in place lateral connection lining, and point repair excavations. This project requires the preparation of a PennVest Loan as the client's funding source.

MSANK Kinloch I/I Removal Project, MSANK, New Kensington, PA: Project Engineer responsible for the assessment of sanitary flow meter and CCTV data, and the preparation of a corrective action plan. This project is part of the first phase of MSANK's Long Term Control Plan to remove excessive I/I into the collection system. Three sub basins to the Kinloch Interceptor were identified as having significant wet weather contribution. With no prior background data on the sub basins, flow meters were installed to identify areas of the highest I/I contribution. CCTV data was collected in each of the basins to identify any structural defects in the sewer pipe. A corrective action plan was developed to reduce I/I sources from defective pipes, roof and foundation drains, and leaking laterals.

MSANK Office and Garage Building Project, MSANK, New Kensington, PA: Project Engineer responsible for developing E&S and civil drawings; coordinating the completion of HVAC, plumbing, and electrical drawings; and preparing the bidding package for the design phase. The project consisted of the design and construction of a new administrative office building, laboratory, locker room, and vehicle garage. Exterior site design incorporated permeable pavers and a rain garden to manage storm water runoff through the use of green infrastructure. Provided construction oversight, shop drawing review, and contractor coordination during the construction phase of the project.

MSANK WWTP Upgrade Project, MSANK, New Kensington, PA: Project Designer responsible for developing front end engineering for a 7 MGD wastewater treatment plant upgrade to 20 MGD. Project includes the design of new primary clarifiers, expanding aeration tanks, new secondary clarifier, new chlorine contact tanks, an office building and garage, and new underground piping.

FTMSA Heather Highlands Sanitary Flow Study Report, Franklin Township Municipal Sanitary Authority (FTMSA), Murrysville PA: Project Engineer responsible for assessing sanitary flow meter and CCTV data and preparing the technical report. The Heather Highlands

is a separate sanitary collection system that is known to have excessive wet weather flows resulting in illegal SSO events. As part of this project, a hydraulic flow study, consisting of 16 flow and level meters, was installed to quantify the impacts of rainfall from this drainage area. The project identified several sub basins that contributed significant amounts of dry and wet weather I/I. The report recommended a corrective action using CIPP and sub basin CCTV investigations, and manhole inspections.

FTMSA Sloan School Pump Station Stair Replacement, FTMSA, Murrysville PA: Project Engineer responsible for coordinating preparation drawings, specifications, and bidding documents to retrofit a new three story FRP stairway and safety railing for the pump station.

Chartiers Pump Station Upgrade Project, Lower Burrell Municipal Sanitary Authority, Lower Burrell, PA: Project Engineer responsible for preparing the preliminary design report to rebuild the Chartiers Pump Station. The design included the hydraulic impacts of adding three additional drainage areas to the pump station collection system, increasing the pumping capacity, and providing offline wet weather storage.

Ludwig Pump Station Cost Analysis Assessment, Neshannock Township, PA: Project Designer responsible for completing a cost analysis for various alternatives to repair or replace the existing force main at the Ludwig Pump Station. The cost analysis compared the cost to repiace a portion of the existing cast iron force main with HDPE pipe vs two aiternatives for a new alignment of the force main. The new alignment compared traditional open trench installation with trenchless tunneling methods.

ALMONO Site Demolition and Rough Grading, RIDC, Hazelwood, PA: Project Designer responsible for providing construction management and field engineering services for the reclamation of a high profile 178-acre Brownfield site which formerly served as the Hazelwood Works for Jones & Laughlin Steel. Work entailed the demolition of existing mill structures and foundations, utility modifications, new sedimentation basins and structures, undercutting, and placement of 800,000 cubic yards of imported clean fill over the site.

MSANK Long Term Control Plan Alternative Analysis, MSANK, New Kensington, PA: As Project Designer, responsible for the design and analysis of project alternatives focused on reducing SSO and CSO discharges throughout the sanitary collections system to achieve compliance with an EPA consent order. Project responsibilities included identifying and assessing control technologies, selecting project locations, design of each proposed alternative, performed cost analysis on designs utilizing green infrastructure, vortex separators, storm separation, and storage facilities.

Erosion and Sediment Control Plans, Confidential Client: Lead Field Designer in charge of determining augmentation pipeline corridors and mapping of required E&S controls for permit submissions. Job responsibilities include E&S inspections throughout construction and post construction phases, mapping of as-built systems, and contractor oversight.

Treatment Plant and Collection System Work Order Management Tracking System, MSANK, New Kensington, PA: Lead Project Designer for the creation and development of a computer based equipment and maintenance tracking system. Project includes the identification and inventory tagging of more than 14,000 treatment plant related assets. Assets are entered into a database to track records of asset size, design ratings, vendor and servicing contact information, and O&M requirements. Coordinates with software developers to create a maintenance program that generates work orders for plant assets automatically based on their O&M schedules. The program also allows for tracking of general maintenance and repairs throughout all municipality operations.

MSANK Long Term Control Plan Flow Modeling, MSANK, New Kensington, PA: Project Designer responsible for conducting RTK analysis using EPA SSOAP Toolbox to determine rainfall-derived infiltration and inflow trends throughout rainfall events in combined and separate systems. Project involved analyzing 100+ meter basins to determine RTK formulas that were used and an Infoworks hydraulic model that was required as part of an EPA consent order.

Interceptor Sewer Rehabilitation Project, MSANK, New Kensington, PA: Project Designer for rehabilitation of approx. 1,300 feet of interceptor sewage lines ranging from 24-inch to 18-inch diameter. Project also included the rehabilitation of 13 manholes throughout the city. The rehabilitation measures that were investigated, included conventional hot water cured felt resin and UV cured GRP resin CIPP procedures. Prepared project specifications and contract documents to include contractor options for hot water or UV curing options. Performed cost estimates on projects and reviewed submittals and design calculations for CIPP wall thickness.

MOTT MACDONALD

David M. Mason, PE

Personal summary

Education:

BS, Electrical Engineering, Geneva College, 2002

Mott MacDonald Horizons Training Program Graduate, 2016

Registrations:

Professional Engineer

PA, [redacted] 2009

Professional memberships:

Institute of Electrical and Electronics Engineers

Mott MacDonald Young Professionals, 2013

Committee Member and Co-Chair – Welcoming committee, 2013

Mott MacDonald EICA Standards Committee Member, 2013 – Present; Task Group Leader: Low-Voltage Electrical Systems, 2014 – 2015

Mott MacDonald NASA EICA Steering Committee Member, 2017 – Present; Committee Chair – Company Electrical Safety Initiative, 2017 – Present

Presentations:

Mott MacDonald Electrical Standards and Procedures, April 2016 (Internal Mott MacDonald Training Session)

Electrical Maintenance; January 2017 (Internal Mott MacDonald Training Session)

Presenter – Site Utility Safety (Internal Mott MacDonald Safety Training Course – Pre-Recorded)

Mr. Mason is an Electrical Engineer with experience in engineering production with proven success in client development. His experience includes medium and low voltage power distribution, load flows, building and area lighting, control systems, SCADA, generators and utility paralleling, demand control, power factor correction, power transition systems, instrumentation systems, and electrical inspection. Some of his software experience includes Power Tools for Windows by SKM Systems Analysis, Inc. and AutoCAD.

Mr. Mason is a member of the Mott MacDonald Electrical/Instrumentation Controls and Automation (EICA) Design Standards Committee. As part of this committee, he has served as task group leader for the low-voltage electrical sub-committee, responsible for the preparation and maintenance of low-voltage electrical systems design specifications, details, symbology, and notation. Mr. Mason is also a participant in the EICA Steering Committee serving as committee chair for Mott MacDonald's Company Electrical Safety initiative, responsible for developing and promoting electrical safety training throughout North and South America.

Selected projects

Sludge De-Watering Facility Upgrades, Franklin Township Municipal Authority (FTMA), Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing engineering design services for the removal of sludge de-watering process equipment and installation of a new de-watering process and material delivery system. Work scope includes removal of two existing presses and associated electrical infrastructure (controls cabinets, starters, etc.) and design and implementation of both temporary sludge de-watering equipment, as well as new permanent process equipment, including SCADA system interfaces, power, and controls system design.

Aspinwall Water Treatment Plan Capital Improvement Plan Review, PWSA, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing Owner's representative services for electrical capital improvements at PWSA's Aspinwall Water Treatment Plant. Work included review of PWSA's Consultant's condition assessment report and capital improvement plans, participating in work sessions on behalf of PWSA to review and discuss the results/recommendations of the report and the considerations of the improvement plans as they correspond to maintenance, and enhancement of ongoing plant operations and overall effect on other sites and processes served from the infrastructure at this location.

Pump Stations Upgrades, Neshannock Township Sewer Department, Lawrence County, PA: Senior Electrical Project Engineer responsible for providing engineering design and construction period services for the renovation of three wastewater pump stations for Neshannock's Sewer Department. Work scope includes replacement of existing interior standby diesel generators with new outdoor standby diesel generators in sound attenuated enclosures, installation of permanent variable load banks to mitigate wet stacking issues, complete replacement of the site power distribution system, including electrical service upgrades, design of new I&C and cellular based SCADA system, and duplex/triplex pump control panels utilizing VFD's to improve system efficiency and overall system flow capacity.

Electrical Systems Preventative Maintenance Program, Municipal Authority of the Township of Robinson, Pittsburgh, PA: Senior Electrical Engineer responsible for providing program design and project management for a comprehensive electrical systems preventative maintenance program, covering a total of 26 facilities throughout Robinson Township, including water distribution facilities, wastewater facilities, and an administrative office building. This program compared baseline metrics against observed conditions to determine the need for equipment repair/replacement prior to failure to reduce unforeseen equipment downtime.

Sugar Creek Water Distribution Systems Upgrades, UPMC Senior Communities Corp., Franklin, PA: Senior Electrical Engineer responsible for providing project management and electrical design for the upgrade of an existing private water distribution system serving an existing skilled nursing facility and county services home. The project included renovation of an existing pump controls building; demolition of an existing 100,000 gallon in-ground reservoir and an existing 75,000-gallon elevated storage tank and associated boiler building; installation of a new 120,000-gallon split storage tank and associated control building; and modification of the existing water distribution system transmission lines.

Wastewater Plant Expansion / Equalization Tank Installation, Municipal Authority of the Township of Robinson, Pittsburgh, PA: Senior Electrical Engineer responsible for providing electrical design and performed electrical construction observation and equipment start-up for the expansion of a wastewater plant, including the installation of an upgraded site utility service, new process sludge pumps, blowers, UV disinfection system, an equalization tank, associated blowers and lift pumps, and a site SCADA system upgrade. Major electrical equipment installed included an emergency diesel generator and associated automatic transfer switches, new power distribution switchboards, motor control centers and associated pushbutton/process controls, variable frequency drives, interior and exterior lighting, and power distribution.

Multi-Site Generator Installation, Wilk-Penn Joint Water Authority, Allegheny County, PA: Senior Electrical Engineer responsible for providing electrical design for the integration of new standby diesel generators and associated transfer switches at two existing pump houses, located in residential developments.

Sludge De-Watering Facility Addition, Oakmont Water Authority, Oakmont, PA: Senior Electrical Engineer responsible for providing electrical design for the expansion of an existing sludge handling building to facilitate the installation of a new sludge de-watering press. This included a utility service upgrade, process control upgrades, installation of a new variable frequency drive to drive an existing sludge feed pump, new lighting, and power distribution.

High Service Pump and VFD Upgrade, Ambridge Water Authority, Ambridge, PA Senior Electrical Engineer responsible for providing electrical design and performing electrical construction observation and equipment start-up for the installation of a new 5MGD high service pump and associated medium voltage variable frequency drive at the reservoir pump house. The project also included a SCADA system upgrade at three facilities to provide speed control to the VFD based on remote tank level and allows for control of the pump house from the water plant.

Pump Station Assessment Reports, PWSA, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing field observation and engineering recommendations regarding the existing condition of PWSA's Aspinwall Pump Station, Fox Chapel Pump Station, Bruecken Pump Station, and New Highland Pump Station. Work scope included asset tagging, preparation of a summary report identifying existing conditions, code violations, system deficiencies, and 15-year capital improvement plans for each site, including Opinions of Probable Cost for implementation of the capital improvements.

New Highland Rising Main Project, PWSA, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing conceptual electrical engineering design services for a new pump station facility within PWSA's service area intended to tie Highland Reservoir #1 and Highland Reservoir #2 together, as well as providing additional pumping capacity to the remainder of the system of approximately 50MGD. Work includes oversight of a conceptual Revit electrical design for the new pump station facility, preliminary equipment sizing, selection and conceptual design of major infrastructure and equipment (including new switchgear, VFD's, standby diesel generators, Automatic Transfer Switches, roll-up generator tap boxes, lighting, controls sequence of operations, instrumentation and SCADA system upgrades), coordination with the local utility provider, documentation of recommendations and system enhancements, and preparation of conceptual opinion of probable construction costs.

Multi-Site Grinder Pump Installation Project, Neshannock Township Sewer Department, Lawrence County, PA: Senior Electrical Project Engineer responsible for providing engineering design for the installation of approximately 75 grinder pumps throughout existing and new residential developments. Work scope included preparation of design details to allow for the installation of a pre-fabricated grinder pump system in several residential conditions.

Akron CSO Rack 15 Storage Basin Project, City of Akron, OH: Senior Electrical Project Engineer responsible for providing construction period services for the construction of a new storage basin for the City of Akron, including submittal review, preparation of responses to RFI's, preparation of Opinions of Probable Construction Cost (OPCC's) for Contractor recommended modifications, design review of vendor proposed system modifications, and site visitation and observation.

Miscellaneous On-Call Electrical Services, MSANK, Pittsburgh, PA: Electrical Project Engineer responsible for providing various on-call electrical services for MSANK, including on-site troubleshooting, power quality metering activity, field observation for system testing, and preparation of associated documentation for several pump stations and the main treatment facility.

Main Pump Station Upgrade, ALCOSAN, Pittsburgh, PA: Electrical Project Engineer responsible for providing electrical design peer review and construction period services, including submittal review, preparation of responses to RFI's, and preparation and review of point-to-point equipment wiring diagrams for a major pump station upgrade.

Euclid Creek Pump Station, Cleveland, OH: Electrical Project Engineer responsible for providing electrical design, peer review, and construction period services for the retrofit of a sewage pump station. The project includes three Variable Frequency Drive controlled pump motors, gas monitoring and alarm systems, SCADA upgrades and basic facility lighting, branch circuit power distribution systems, and mechanical systems integration.

Arc Flash Hazard Assessment – Highland Pump Station, PWSA, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing a site assessment regarding potential arc flash hazards at PWSA's Highland Pump Station. Conducted a site walk-through and prepared a conditions assessment report, which compared current operational conditions against current OSHA safety and NFPA standards to establish a baseline for safe equipment operations and potential preventative maintenance activities to reduce the likelihood of future equipment failures.

Dominion Lebanon Field Observation and Site Information Collection, Lebanon, OH: Senior Electrical Project Engineer responsible for gathering field documentation on behalf of our Pipelines Unit for the reversal of a pipeline manifold at Dominion's Lebanon, OH location. Field data collected included power distribution data, detailed I&C data, physical equipment and conduit layouts, and wiring methods.

Tallgrass EPCM Site Utility Service Upgrade, Lebanon, OH: Senior Electrical Project Engineer responsible for the design of a utility transformer upgrade, new 208V service entrance equipment, and site distribution that allowed Boardwalk Pipeline Partners to install two additional gas transmission pipeline heater units at this site. Additional responsibilities included the preparation of an updated site Arc Flash Study and coordination with the electrical utility to be able to expedite the construction of the project against an accelerated construction schedule.

Murrysville PNC Bank Grinder Pump Installation, FTMA, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing electrical oversight and QA/QC for the design of a new grinder pump at PNC Bank in Murrysville, PA. The work included installation of a new electrical service, utility metering, and grinder pump control equipment in a newly constructed development.

Steel Plaza Emergency Systems Equipment Code Assessment, PAAC, Pittsburgh, PA: Senior Electrical Project Engineer responsible for providing electrical oversight and QA/QC of the preparation of a conditions assessment report, and comparing current operational conditions against current OSHA safety and NFPA standards to establish a baseline for safe equipment operations.

Blackthorne Pump Station Plan Review, Franklin Township Municipal Sanitary Authority (FTMSA), Pittsburgh, PA: Electrical Project Engineer responsible for providing Owners Representative design document review services for a new pump station that was provided by a developer and then taken over, owned, and operated by FTMSA. Additional responsibilities included coordination with the developer and their consultant to assure that the solutions provided were in accordance with FTMSA standards and that the provided SCADA and I&C equipment communicated with FTMSA's existing system equipment.

Clarifier Rehabilitation, FTMSA, Pittsburgh, PA: Electrical Project Engineer responsible for providing electrical design peer review and construction period services, including submittal review and preparation of responses to RFI's for the rehabilitation of clarifiers at FTMSA's main treatment facility.

Seneca Place Generator Upgrade / Ventilator Installation Project, UPMC Senior Communities Corp., Pittsburgh, PA: Electrical Engineer responsible for providing project management and electrical design services for the installation of a new emergency generator, automatic transfer switch, and electrical power distribution project to allow for the implementation of a ventilator program at an existing skilled nursing facility. Work included minor HVAC systems upgrades, extensive modification of the existing building electrical distribution system, and expansion of the emergency power system while keeping the site in normal operation and incorporating measures to assure ICRA compliance.

MOTT MACDONALD

Brandon Hodges

Personal summary

Education:

Business Courses, Parkersburg Jackson Community College, 1995

Business Courses, Marshall University, 1994

Certifications:

ACI certified Field Testing Technician, Grade I

WVDOT Certified Portland Cement Concrete Inspector

WVDOT Certified Aggregate Sampling Inspector

WVDOT Certified Compaction Inspector

Heartsaver First Aid CPR AED Certification

WV Notary Public

Class 1D Water Operator

OSHA 10 Hour Occupational Safety and Health Certification

Mr. Hodges has 20 years of experience in the engineering and construction industries. He has gained experience in both the design and construction phases of utility, site, and building projects. Through a variety of projects and responsibilities, Mr. Hodges has continued an upward rise in the engineering field. Specializing in the utilities industry, he can perform a multitude of tasks in project management, from design and layout, to inspection and quality control testing. He has served as Resident Project Representative on many multi-million dollar projects, and has experience with client interface, site analysis, contracts, plan and code review, and all functions relative to construction administration from groundbreaking through project completion. With Mott MacDonald, he continues to fulfill multiple tasks and assignments for varying client needs, both in the field and in the office.

Selected projects

Chesterfield Avenue Reinforcement / Rich Fork Road Reinforcement, West Virginia American Water, Charleston, WV: Technician selected by client to provide Project Management for the construction phase of two large reinforcement projects. Provided support to Mott MacDonald Resident Project Representatives, and worked with owner, WVDOH, and other utility companies to facilitate any field changes on projects. Reconciled and catalogued daily and weekly reports, and reviewed and approved change orders and pay applications.

Huntington Booster Station Replacements, West Virginia American Water, Huntington, WV: Technician responsible for assisting WVAW distribution team on their booster station program. Responsible for researching and acquiring new sites, rights of way, and any required permits. Performed survey work, as needed. Served as a liaison between property owners and WVAW in negotiations for compensation. Also involved with acquiring and supporting any geotechnical work that is required.

WVDOH Relocations, West Virginia American Water, Multiple Locations, WV: Technician responsible for assisting WVAW Engineering team on all projects involving potential relocations due to WVDOH planned projects, including bridges, storm sewers, and road widenings. Performed utility verifications, researched existing rights of way, designed relocation plans, acquired permits and new rights of way, and provided material take-offs, bid tabs and construction estimates to the owner.

Stormwater Pollution Prevention Plan (SWPPP), City of Charleston, Charleston, WV: Technician responsible for working with city employees to evaluate their respective site for potential stormwater contaminants, reports to team leaders, and assists in writing the SWPPP document. The team was selected to assist the City of Charleston in site evaluations and mapping of 24 city-owned facilities as part of developing SWPPPs for each site.

Various Projects, West Virginia American Water, Charleston, WV: Project Technician responsible for performing a variety of technical services for WVAW Engineering Department upon their request. Services include project design, estimation and layout, boundary and as-built surveys (both conventional and GPS), courthouse research, and right-of-way and easement acquisition. Mr. Hodges also prepares and submits multiple permit applications for WVAW, including West Virginia Department of Highways, United States Army Corps of Engineering, and West Virginia Office of Land & Streams. The client also requested him to serve as a Resident Project Representative on a water line relocation project needing an experienced ambassador due to sensitivity of affected customers.

Sanitary Sewer Upgrade, Town of Delbarton, Delbarton, WV: Lead Inspector on a much needed $5M sewer system upgrade project, replacing 50+ year old mains and reducing infiltration. The project involved over 25,000 feet of new piping, much of it deep and installed in the roadway. Responsible for overseeing all work, including sheeting and shoring, dewatering operations, pipe installation and backfill, resurfacing, and reclamation. Project involved grinder pump stations, HDPE force main, and required bypass pumping to ensure continuous operation of the system. Project also included CIPP slip-lining, which inserts, inflates, and cures a new liner within the existing pipe through existing manholes, eliminating the need to trench and backfill. Documented work progress and approved change orders and construction estimates. Project required the ability to quickly make field adjustments, avoiding contractor shut downs due to incomplete or incorrect plan information.

Fayetteville Acquisition, West Virginia American Water, Fayetteville, WV: As Construction Administrator, performed multiple duties to assist in a successful transition between water facilities. Project required decommissioning Fayetteville's antiquated water treatment plant, immediate replacement of 24 fire hydrants, and connection of the two systems in multiple places. Concentration also placed on small diameter main replacement and upgrades to distribution lines and meters that allowed for the removal of a water storage tank and increased water pressure for hundreds of customers. Involved in planning, design, inventory management, and all aspects of construction. He communicated with stakeholders, including owner/engineer, City of Fayetteville, WVDOH, Miss Utility, contractors, and customers.

FEMA Storm Sewer, Town of Man, Man, WV: Resident Project Representative for completion and tie in of a 60" HDPE storm drain, including a concrete and gabion inlet structure, drop inlets, and connection to existing facilities. The project was necessary due to floods overwhelming the existing facilities with debris. The project relocated the storm sewer from private citizens' property onto town streets. Oversaw excavation, installation, backfill, and resurfacing. He communicated with necessary parties involved with utility relocation. Documented work progress and approved change orders and construction estimates.

East Main Street Upgrade, West Virginia American Water, Oak Hill, WV: Resident Project Representative on two different water main upgrade projects through a main traffic artery. Upgraded over 2500 lf of 6" cast iron to 12" ductile iron pipe. Projects required detailed traffic control, live taps, and tie-ins. Involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

Quality Control Testing, WV Department of Highways, Multiple Locations, WV: Performed aggregate sampling, concrete, and compaction testing on multiple projects throughout West Virginia. Worked with both contractors and state inspectors to ensure project materials met required specifications. Mr. Hodges assisted the Contractor in remediation of deficiencies. Documented test results and reported to Project Managers.

Asphalt Inspection, West Virginia Department of Highways (WVDOH), Charleston, WV: Acted as a Consultant for the WVDOH on a variety of paving projects throughout the district. He worked alone and along with a WVDOH inspector. Observed application, compaction, and quality control testing of asphalt. Also calculated application rate, documented quantities, and pay items.

Water System Upgrades, US Army/Virginia American Water, Fort Lee, VA: Resident Project Representative for the construction of upgrades and reinforcements to the Fort Lee US Army base water system. Strict work and time regulations required diligence and communication. Project included live tapping, valve insertions, and line stops. Required water outages were on a time schedule, and each was completed on time. He was involved in all aspects of construction, from layout through sampling, testing, and completion. Communicated with all stakeholders, including VAWC and US Army officials, contractors, and residents.

20-Inch Water Relocation, West Virginia American Water, Institute, WV: As Resident Project Representative on a one-mile-long water line relocation, removed a potable water line from potentially contaminated soil inside a chemical plant facility and relocated it to a suitable location. Project included hazardous material training and required diligence to avoid disruption of plant facilities. He was involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

US Route 50 Bypass / Little Kanawha River Bridge, West Virginia Division of Highways (WVDOH), Parkersburg, WV: Co-Resident Project Representative on a $25M, 2100 lf, four-lane bridge. Was involved in all aspects of bridge inspection, including excavation, piling, piers and abutments, steel work, and surfacing. He oversaw quality control testing and reporting, and calculated excavation and concrete work for payment. Project also included roadway construction and blasting. Documented work progress through detailed daily reports.

US Route 35 Water and Sewer Relocation, South Putnam Public School District, Teay's Valley, WV: As Resident Project Representative, Mr. Hodges coordinated with contractor, engineer, school district, and WVDOH to relocate utilities for the widening of a main traffic artery from two lanes to three, which required multiple crews working on water and sewer. The project included live tapping, bypass pumping, multiple tie-ins, and an aerial sewer line crossing. It also involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

MOTT MACDONALD

Corey Clark

Personal summary

Education:

BS, Civil Engineering Technology and Architectural Engineering Technology, Bluefield State College, 2015

Certifications:

OSHA 10 Hour & 30 Hour

PCI Level 1, 2 and 3

ACI Concrete Field Testing Technician- Grade 1

NCDOT Concrete Field Technician

Mr. Clark has three years of experience in the engineering and construction field. His experience includes field and lab testing of concrete, soil, and aggregates; inspection of precast and prestressed concrete members; and inspection and design of water utility pipes.

His past responsibilities include quality control of both precast and prestressed concrete members, inspection of concrete members, training co-workers in inspection of concrete members, construction material testing in lab and in the field, and GPS location of utilities.

Selected projects

Grassy Branch Phase II Project, West Virginia American Water (WVAW), Mercer County, WV: As Resident Project Representative, performs site inspection for all service line installations. Documents daily activity of work performed and materials used.

Route 19 Upgrade Project, West Virginia American Water (WVAW), Mercer County, WV: As Resident Project Representative, performs site inspection for 12-inch ductile iron main line installation. Documents daily activity of work performed and materials used.

NCDOT Project, North Carolina Department of Transportation (NCDOT), NC: As Quality Assurance Inspector, inspected prestressed concrete highway structures, including voided box beams. Performed daily and weekly inspection reports.

MSHA Project, Maryland State Highway Administration, MD: As Quality Assurance Inspector, inspected precast and prestressed concrete highway structures, including sound wall barriers, box beams, and I-beams. Performed daily and weekly inspection reports.

GPS Meter Location Project, West Virginia American Water (WVAW), Mercer, Summers, and Raleigh Counties, WV: As a Technician II, used GPS to locate meters, valves, and hydrants.

MOTT MACDONALD

John F. Fouty

Personal summary

Education:

AS, Business Administration, West Virginia University of Parkersburg, 2003

Certifications:

WVDOH Aggregate Sampling Inspector

WVDOH Portland Cement Concrete Inspector

WVDOH Compaction Inspector

CESSWI (Certified Erosion, Sediment & Storm Water Inspector) Part 1

Contractors Association of WV-Radiation and Hazardous Material Safety Training

U.S. Department of Labor - Mine Safety and Health Administration

Mr. Fouty has 27 years of experience in the engineering and surveying field. His surveying experience includes basic location work, topographic surveys, sub-division layout, and GPS experience in both control and location needs. Mr. Fouty has also served as Resident Project Representative and has provided inspection work for utility installations. He has valuable experience with customer relations and site analysis regarding utility installation, cost estimating, and construction. With Mott MacDonald, he works in a variety of capacities, providing site inspection, design proposals, cost estimates, logistics support, and property research, along with survey assistance and GPS location, when needed.

He has experience in all phases of surveying and working with various surveying and GPS instruments, deed research for oil and gas well locations, plotting deeds, and locating gas lines and boundary markers using conventional equipment or by GPS equipment (Trimble and Sokkia). He has also performed inspection work on oil and gas well sites.

His past responsibilities also included ensuring compliance with OSHA regulations and safety practices. He has the proven ability to establish effective and safe working relations with contractors, subcontractors, consultants, utility companies, government agencies, municipalities, property owners, employees, and the general public.

Selected projects

Queen Shoals Water Main Replacement Project, West Virginia American Water (WVAW), Clendenin, WV: As Resident Project Representative, performed site analysis for over 14,460 LF of 8" ductile iron pipe. Responsible for providing onsite inspection, installation of new main water lines, and abandonment of old water lines. Conducted pressure tests and prepared as-built drawings and connection details from field observations. Provided daily documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors and other utilities to ensure a cooperative effort and compliance throughout each project.

Rich Fork Road Reinforcement Project, West Virginia American Water (WVAW), Charleston, WV: Resident Project Representative responsible for providing onsite inspection for installation of approximately 9,160 LF of 12" ductile iron pipe, meter rebuilds, and abandonment of old water lines and materials. Conducted pressure tests and prepared as-built drawings and connection details from field observations. Maintained daily reports and documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors.

Miscellaneous Technical Services, West Virginia American Water (WVAW), Kanawha County, WV: In his role as Field Consultant, performed a variety of technical services for WVAW. Services included proposals for project design, estimation, and layout; topographic and as-built surveys; property research; and right-of-way and easement acquisition. Successfully acted as a liaison between WVAW and WVAW customers regarding expansion of the water distribution system.

Mountain Road Reinforcement, West Virginia American Water (WVAW), South Charleston, WV: Resident Project Representative for main line reinforcement. The project involved the upgrade of 1,044 LF of 8" ductile iron pipe, 383 LF of 6" pipe and 400 LF of 2" pipe. Involved in all aspects of construction, from layout through sampling, pressure testing, and completion of as-built drawings. Documented work progress through detailed daily reports.

Chesterfield Avenue Reinforcement Project, West Virginia American Water (WVAW), Charleston, WV: Resident Project Representative responsible for providing onsite inspection for installation of approximately 8,000 LF of 16" ductile iron pipe, meter rebuilds, railroad crossing and occupation and abandonment of old water lines and materials. Conducted pressure tests, and prepared as-built drawings and connection details from field observations. Maintained daily reports and documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors.

State of West Virginia

Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

the attached true and exact copy of the Articles of Amendment to the Articles of Organization of

HATCH MOTT MACDONALD, LLC

are filed in my office, signed and verified, as required by the provisions of West Virginia Code §31B-2-204 and conform to law. Therefore, I issue this

CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the limited liability company to

MOTT MACDONALD, LLC

Given under my hand and the Great Seal of the State of West Virginia on this day of May 26, 2016

Natalie E Tennant

Secretary of State

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

MOTT MACDONALD, LLC

C02536-00

Engineer in Responsible Charge: GARY D FACEMYER - WV PE 008287

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

Mott MacDonald, LLC

Charleston, West Virginia

CERTIFICATE OF AUTHORIZATION # 19-5733

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 6th 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

West Virginia State Board of Registration for Professional Engineers

GARY D. FACEMYER
WV PE [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

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.

GARY D. FACEMYER, P.S. [redacted]

Issued
July 1, 2018

Expires
June 30, 2019

R Michael Shepp

Nelson B Douglass

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/01/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis of New Jersey, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378 E-MAIL ADDRESS: certificates@willis.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Fireman's Fund Insurance Company	21873
INSURER B : American Automobile Insurance Company	21849
INSURER C : Lloyd's Syndicate 1886	C5136
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Mott MacDonald, LLC
111 Wood Avenue South
Iselin, NJ 08830 USA

COVERAGES **CERTIFICATE NUMBER:** W8300669 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [X] LOC [ ] OTHER:			MZX80988373	06/30/2018	06/30/2019	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 1,000,000 $ 10,000 $ 2,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			MZX80988373	06/30/2018	06/30/2019	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 2,000,000 $ $ $
	[ ] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [No] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		SCW0029061801	06/30/2018	06/30/2019	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C	Professional Liab.			B080120388P18	06/30/2018	06/30/2019	Per Claim Per Aggregate	$1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

For Your Information

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Courtesy Notice of Cancellation for Other Than Nonpayment of Premium to Designated Entities - 145977 01 11

Policy Amendment Policy Number: Policy Number: MZX80988373 Effective Date: 06/30/2018; SCW0029061801 Effective Date: 06/30/2018 General Liability; Auto Liability, Workers Compensation

Schedule

Name and Address of Person(s) or Organizations	**Number of Days Notice if other than 10 days:**
On File with Carrier, as required by written contract	Cancellation Number of Days Notice- **60** When we don't Renew (Non-Renewal)- **30**

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

This policy is amended as follows:

A. If We cancel this policy prior to expiration for any reason other than non payment of premium or at Your request, and we have been notified that You are required under a current contractual obligation to notify a certificate of insurance holder or holders when this policy is canceled, then We will endeavor to mail or deliver a copy of such written notice of cancellation to the certificate holder(s) shown in the Schedule above, as follows:

   1. To the name and address corresponding to each certificate of insurance holder indicated in the Schedule above; and

   2. At least 10 days prior to the effective date of the cancellation, as shown in our notice to the first Named Insured, or, if indicated, the longer number of days notice shown in the Schedule above.

B. Notwithstanding the foregoing, such notice of cancellation is provided on an informational basis and solely to assist You in informing the certificate of insurance holder(s) in advance of pending cancellation in coverage to assist you in meeting Your contractual notice requirements to such parties. Our failure to provide such advance notification to the certificate of insurance holder(s) shown in the Schedule of this endorsement will not extend any policy cancellation date, negate any cancellation of the policy, or grant, alter or extend any rights or obligations under this policy and we shall have no liability for any failure to provide the notice(s) as provided herein.

All other terms and conditions of this policy remain unchanged.

INSURER CANCELLATION TERMS

NAMED INSURED	POLICY NO.
Mott MacDonald Group, Inc. 111 Wood Avenue South Iselin, NJ 08830-4112	B080120388P18
	EFFECTIVE DATE **06/30/2018** SEE PAGE 1

Holder Name:

Project:

Cancellation Terms:

Should any of the above described policies be cancelled before the expiration date thereof, the insurer will send 30 days notice of cancellation to the Certificate Holder, but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives.

Cancellation Terms Apply to the Following Coverages:

Professional Liability

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.

Gary Facemyer

(Name, Title)
Gary Facemyer, PE; Senior Associate

(Printed Name and Title)
201 Pennsylvania Avenue, 4th Floor, Charleston, WV 25302-2315

(Address)
304.356.3011 / 304.357.9222

(Phone Number) / (Fax Number)
Gary.Facemyer@mottmac.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.

Mott MacDonald, LLC
(Company)

(Authorized Signature) (Representative Name, Title)

Stephen B. Polen, PE; Senior Vice President
(Printed Name and Title of Authorized Representative)

2-15-19
(Date)

412.497.2950 / 412.497.2901
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

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: None
(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.

Mott MacDonald, LLC
Company

Authorized Signature

2-15-19
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

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: Mott MacDonald, LLC

Authorized Signature: _____ Date: 2-15-19

State of Pennsylvania

County of Allegheny, to-wit:

Taken, subscribed, and sworn to before me this 15 day of February, 2019

My Commission expires March 3, 2020.

AFFIX SEAL HERE

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Melissa S. Root, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires March 3, 2020
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

NOTARY PUBLIC Melissa S. Root

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Mott MacDonald, LLC **Address:** 201 Pennsylvania Avenue, 4th Floor Charleston, WV 25302

Name of Authorized Agent: Stephen B. Polen, Senior Vice President **Address:** same

Contract Number: DNR1900000002 **Contract Description:** A/E Services for Cass Scenic Railroad SP Wastewater Repairs

Governmental agency awarding contract: DNR - Parks and Recreation

☐ **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: [signature] Date Signed: 2-15-19

Notary Verification

State of Pennsylvania, County of Allegheny:

I, Stephen B. Polen, 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 15 day of February, 19.

Melissa S. Root
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Melissa S. Root, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires March 3, 2022
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Revised June 8, 2018