

**R HUNTER HURT,** ▲ | ▲  
P L C  
**A R C H I T E C T U R E**

- ◇ urgent
- ✓ for review
- ◇ please comment
- ◇ please reply

112 N. Cameron Street | Suite 100 | Winchester, VA | 22601 | TEL 540.678.3500 FAX 540.678.0484 | www.rhunterhurtaia.com

TRANSMITTAL / FAX

TO: PURCHASING DIVISION

FAX: \_\_\_\_\_

PHONE: \_\_\_\_\_

RE: STATE OF WV - CACAPON STATE PARK

PAGES: \_\_\_\_\_

DATE: 12/5/08

CONTENT: EOI Letter & Brochures

CC: \_\_\_\_\_

RECEIVED

2008 DEC -8 A 9:49

PURCHASING DIVISION  
STATE OF WV

COMMENTS:

ATTACHED ARE 3 COPIES OF OUR EOI SUBMISSION MATERIALS. I APPRECIATE THE OPPORTUNITY TO SHOWCASE OUR WORK AND LOOK FORWARD TO YOUR RESPONSE.

REGARDS,  
R. Hunter Hunt

**December 5, 2008**

**Purchasing Department  
2019 Washington Street, East  
P.O. Box 50130  
Charleston, WV 25305-0130**

**Re: Expression of Interest  
Cacapon Resort State Park  
DNR 209057**

**To whom it may concern,**

**The architectural firm of R. Hunter Hurt, AIA. plc is pleased to submit this letter in response to the Expression of Interest for the project reference above. This small architectural firm brings over 30 years of experience to the design profession of architecture. We provide a broad range of professional services which includes but not be limited to feasibility studies, building and code analysis, preliminary design, project costing, construction documents and contract administration.**

**Our commitment to provide professional services is built on our reputation of successfully meeting our client's goals. Listening and establishing a realistic scope of work while meeting the stringent budget forms our foundation for working with our clients. Another firm's strength also lies in accomplishing the building's program with an end result of a creative, attractive, affordable and functional structure.**

## **R. Hunter Hurt, Principal**

Since graduating from Virginia Polytechnic Institution & State University in 1977, Mr. Hurt's involvement in the field of architecture has been with much depth and variety. Having worked with many general contractors, developers and design build companies have provided Mr. Hurt with an excellent array of experiences and a very strong philosophy of design. His history of projects types include but are not limited to residential development, country club facilities, multi family construction, commercial building, medical facilities, historical preservation, educational and religious complexes, hotel and motel projects, industrial and manufacturing facilities.

Mr. Hurt has been certified by The National Council of Architectural Registration Boards and is licensed as an Architect in the states of Virginia, West Virginia, Maryland and the District of Columbia. Mr. Hurt also holds a Class "A" Contractor's license in the state of Virginia. His knowledge is utilized to provide clients with a superior architectural product that represents individual character but also reflects a cost affected approach in the type and means of construction.

## **Consultants**

The firm of R. Hunter Hurt, AIA has a deep association with many local consulting firms. Our first choice for partnering on this project will be Bowman Consulting for the improvements related to the golf course. Their vast experience and high ethical standards will be an excellent fit for combining our strengths together on this project.

In addition to Bowman Consulting, it will be this firm's intent to add Waste Water Management, Inc. to our design team. Their expertise in addressing the concerns and improvements to the water system is a must. Waste Water Management, Inc. retains the experience and knowledge required to perform waste water analysis, operation assessments and design with value engineering to achieve the most viable solutions.

In highlighting this firm and our consultants, please see attached brochures for your review. These brochures will provide you with a little more information on who we are and what we do.

### Why not Us

In an effort to help you realize what similar experiences this firm has accomplished, I am going to highlight a few projects parallel to Cacapon State Park's scope of work.

The first project is based on an expansion of 52 additional rooms to an existing Comfort Inn Motel. Also added to this scope of work was a drive through portico, new stairwells with protected wind panels and a new metal roof to bring the entire project together.  
(See Firm's Brochure)

This second project I'm mentioning is a completed but current project that has become somewhat high profile in the historic district of downtown Winchester. I am referring to The Old Taylor Hotel. This historic structure will become the home of 30 new two bedroom two bath condo units totaling thirty four thousand square feet from the second floor to the sixth. There will be an additional fifteen thousand square feet of retail space located on the walking mall or ground floor. The most important part of this project in my opinion is the planned plaza that will become the gathering place for residents and shoppers.

112 N. Cameron Street  
Suite 100  
Winchester, VA  
22601  
TEL 540.678.3500  
FAX 540.678.0484

**A historic downtown property that this firm has completed was the renovation of the Piccadilly Brew Pub. This two story brick furniture warehouse was converted into a local watering hole on the main level that also offers formal and informal dining and reserved areas for private parties, etc. on the second level. (For more information on both of these referenced projects and review illustration, please see the Firm's Brochure)**

**In reference to the proposed fitness facility at Cacapon, this firm is currently completing construction documents for a new fitness facility for the Winchester Country Club. This project will display a new entry façade, interior cardio area, babysitting, open area free weights, large & small exercise rooms, locker and shower facilities, sauna, steam room, massage room and lounge areas. The existing outdoor pool built in 1963 is to be dug up and replaced with a grand pool that offers many new amenities to service the whole family and club. Also included within the project will be new stand alone bath facilities.**

**One improvement noted about the lodge was an expansion of the existing dining facility and related kitchen facilities with related equipment improvements and replacements. In regards to food service, this firm has in the past and is currently working with Mark Mosley and Five Guys, Inc. on building out lease spaces for their restaurants. This office proceeds to expand the Five Guys franchise while successfully planning all of the food service requirements. Other past projects in the food services were Ashby Inn, Eastside Raw Bar and Grill, Los Potrillo's a 3500 sq. ft. Tex Mexican /American restaurant.**

**In the majority of our jobs, disciplines such as structural, mechanical, electrical and plumbing are a vital part of the overall project. Our goal here is to provide well engineered practical systems that are tailored to the owner/user needs and to the budget. It is with a sharp eye and a keen sense of design that these disciplines get woven together.**

**A Little History**

This past summer, this office created this firm's brochure. Having not documented any projects for the past many years, it became apparent that this was something that really needed to be done. Using my summer help, (a current junior in architecture at UVA and a student that I have mentored since a junior in high school) this brochure became a design exercise and project within itself. None the less, my goal was to do something a little different than the standard run of the mill 8x11 brochures. As a byproduct of this brochure this firm pushed the envelope and created a new web site [www.rhunterhurtaia.com](http://www.rhunterhurtaia.com) . Both the brochure and wed site were produced in house. Please see flagged referenced projects from the firm's brochure but please take the time to look through the entire piece to understand us better.

Also please see attached Purchasing Affidavit for your records.

Should you have and questions, please do not hesitate to contact me. I look forward to hearing from your department.

Best Regards,



R. Hunter Hurt, AIA

rh /cm  
attachments

112 N. Cameron Street.  
Suite 100  
Winchester, VA  
22601  
TEL 540.678.3500  
FAX 540.678.0484  
[www.rhunterhurtaia.com](http://www.rhunterhurtaia.com)

RFQ No \_\_\_\_\_

STATE OF WEST VIRGINIA  
Purchasing Division**PURCHASING AFFIDAVIT****VENDOR OWING A DEBT TO THE STATE:**

*West Virginia Code §5A-3-10a* provides that: 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 the debt owed is an amount greater than one thousand dollars in the aggregate.

**PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:**

*West Virginia Code §21-1D-5* provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

**ANTITRUST:**

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

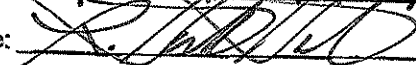
**LICENSING:**

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

**CONFIDENTIALITY:**

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit [www.state.wv.us/admin/purchase/privacy](http://www.state.wv.us/admin/purchase/privacy) for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and is in compliance with the requirements as stated.

Vendor's Name: R. HUNTER HURT, AIA PLLCAuthorized Signature: Date: 12/5/08

## PROFILE

Bowman Consulting provides engineering, planning, surveying, environmental, and landscape architectural services to a variety of markets, both public and private, throughout the mid-Atlantic region. It also offers particular expertise in zoning, and in land development/building regulations at the local, state and federal levels. The work of the firm includes residential, commercial, retail, health care, educational, recreational, municipal, and federal projects. Headquartered just west of Washington, D.C. in Chantilly, Virginia, Bowman Consulting has ten regional offices and over 250 employees.

Additional areas of expertise include:

- Master and Land Use Planning
- Development Feasibility Analysis
- Landscape Architecture
- Geothermal Systems & Technologies
- Zoning Entitlements
- Rezoning and Special Exception Consulting
- Design Guidelines and Development Standards
- Preliminary and Final Site Planning
- Visualization
- Phase I and Phase II Environmental Site Assessments
- Wetlands Delineation, Permitting and Mitigation
- Perennial Flow Studies
- Site and Subdivision Design
- Water Supply and Distribution
- Wastewater Collection
- Street and Highway Design
- Storm Drainage and Storm Water Management
- Construction Phase Services
- Surveying and Mapping / GPS
- Boundary Surveys
- ALTA Surveys
- Construction Stake-Out
- Condominium, Conversions with Associated Plats and Plans
- Topographic Surveys
- Resource Protection Area (RPA) Studies

Bowman Consulting's clients benefit from a balance of deep resources, often associated with large firms, and the flexibility and quick response associated with smaller boutique firms. Its geographic footprint --- VA, WV, DE, MD, and the District of Columbia -- results in the regional jurisdictional knowledge that clients need to move projects through intricate approval processes.

Since the company's inception in 1995, Bowman has provided professional opportunities for its staff and dedicates remarkable resources to projects of any size. Bowman Consulting's progressive culture attracts the industry's best and brightest people. The focus, however, has remained on the clients and on providing them with high-quality, innovative, cost-effective, and efficient solutions to site and design challenges. From personnel to technology, Bowman continues to offer and provide the best resources available in the industry.

Bowman Consulting has attracted local and national recognition, recently winning the 2008 Helios Apollo Award for a Mid-Sized Company. Recognition has also come from *The Washington Business Journal* (Fastest Growing Companies, 2003/2004), *ENR Magazine* (Top 500 Design Firms, 2005), *Virginia Business Magazine* (List of Leaders, 2005), *The Zweig Letter* (The 100 Fastest-Growing U.S. A/E/P & Environmental Consulting Firms, 2004), *Inc. Magazine* (Top 500 Engineering Firms, 2000) and the Virginia Chamber of Commerce (The 2004 Fantastic 50 Award Program).





## GOLF COURSE EXPERIENCE

**LAUREL HILL GOLF COURSE, FAIRFAX COUNTY, VA**  
Bowman Consulting was responsible for the overall site work for this 18-hole championship golf course with maintenance facility and clubhouse, located on the site of what was once was the DC Correctional Complex at Lorton. Scope of services included: floodplain studies on the original, undeveloped property; storm water and best management (BMP) practices; site design; provision of a 14" gravity sewer that crosses the RF&P Railroad; formal wetland delineation and Resource Protection Area (RPA) analysis; completion of a WQIA and Exception Request for encroachments to the RPA along Giles Run; submission of a wetland permit application; coordination of the wetland and RPA enhancement plans; and the performance of a bathymetric survey on the existing wet pond to verify the stored water available for irrigation of the course.

**ROBERT TRENT JONES GOLF RESORT, PRINCE WILLIAM COUNTY, VA**  
Project was a 1,139-acre exclusive community development that included a championship golf course, and clubhouse, 1,200 residential units, and a retail office park. Provided planning and administrative services from rezoning through construction.

**RIVERBEND GOLF AND COUNTRY CLUB, GREAT FALLS, VA**  
Provided layout design for expansive sewage disposal system. Performed all soil and geologic analysis of materials, and assessed their suitability for use in on-site sewage disposal. Conducted nitrate loading studies and water mounding analysis for this 10,000 gallon per day mass system. All local, state and federal permitting associated with the development of the system was provided, along with construction inspection and management of the system, and oversight for all groundwater monitoring, sampling, and reporting for continued use of the facility.

**PENINSULA AT INDIAN HEAD, SUSSEX COUNTY, DE**  
This was a 300 acre Jack Nicholas Inc. designed waterfront and golf course community. It was the largest of the phased PUD consisting of 164 single family lots and an extensive drainage and stormwater management system to serve the golf course and single family lots. Over 4 miles of roadway infrastructure were designed, including water and sewer distribution systems, mass grading, and sediment and erosion control.

**VERANDA, SUSSEX COUNTY, DELAWARE**  
This was a second phase of the Jack Nicholas Inc. designed waterfront and golf course community. It involved a cluster design development for condominium units on a 10 acre parcel within the Peninsula at Indian Head subdivision. Creative grading layouts were incorporated to integrate the condominium layouts within the golf course and pond system to provide innovative stormwater management with aesthetically pleasing landscapes.

**LAKEWOOD COUNTRY CLUB GOLF COURSE RENOVATION, MONTGOMERY COUNTY, MD**  
This project was the renovation of the existing 161 acre golf course property which included regrading, pathway relocations, drainage, and stormwater management improvements. The project also included the removal of the existing parking lot, the design of a new, larger parking lot, and the redefinition of the access road to the maintenance yard. The Club's main entrance was relocated along Glen Mill Road, approximately 500 ft. Frontage sidewalk and roadway improvements were also designed and constructed. Construction permitting and administration services were provided.

## INFRASTRUCTURE ENGINEERING EXPERIENCE

### BULL RUN COUNTRY CLUB ESTATES PRINCE WILLIAM COUNTY, VA

Bowman Consulting provided land planning, engineering, surveying, permit processing, and environmental services for this single family subdivision with lots of 10 acres or more in size. Lots were designed to be accessible by a network of private streets and roadways from existing Route 15. Individual well and septic disposal systems were also designed. Final subdivision construction plans for 26 lots and related infrastructure were provided. The site features existing lakes, flood plains, wetlands, and RPA's, all of which had to be considered in the design of the final project. The main thrust of the project was to provide extreme environmental controls throughout the construction process to protect existing site features. The project included design of grading, drainage, and an extensive public roadway network.

### CEDAR CREST ESTATES FAIRFAX, LOUDOUN AND PRINCE WILLIAM COUNTIES, VA

This residential community that occupies 900 acres spans three Northern Virginia's counties, meaning three sets of entitlements. Bowman Consulting surveyors performed essential network controls using GPS, established additional controls for photogrammetry mapping, performed an ALTA survey and conducted a route survey for 1 1/2 miles of sewer and water infrastructure. Bowman also prepared subdivision and easement plats to meet the requirements of the state as well as each of the affected jurisdictions. Surveying and engineering services for the Cedar Crest community began in 1996, and work is ongoing.

### CEDAR HUNT HYDRALIC MODELING LOUDOUN COUNTY, VA

Cedar Hunt is 244-lot subdivision on 247-acres located near the western edge of South Riding. During the review of the construction plans, the Loudoun County Sanitation Authority (LCSA) requested that a detailed hydraulic analysis be performed to ensure that adequate pressures and fire flows could be achieved. With the permission of the LCSA, Bowman Consulting took the South Riding portion of LCSA's hydraulic model of the County and simplified the

network to only those pipes 12" in diameter and above. The domestic demands for South Riding were appropriated to the simplified pipe network. In close coordination with LCSA, a fixed grade node modeled as a reservoir WaterCAD element, was selected for the boundary condition. LCSA provided the fixed grade node elevation of the Route 50, 30" waterline. Bowman Consulting set-up a detailed model of the Cedar Hunt development using WaterCAD version 5.0 by Haestad Methods, Inc. Three demand scenarios were studied for average daily demand, peak hourly demand, and maximum daily demand plus for fire flow. The model showed that there were adequate pressures for the three scenarios and no additional looping was required.

### EVERGREEN VILLAGE WATER AND SEWER MASTER PLAN LOUDOUN COUNTY, VA

Evergreen Village is a planned rural development, located on the west side of Beaver Dam Reservoir. The design features 80% of the land as protected open space and 20% clustered for use. This 845-acre site contains 281 single-family detached lots, 24 townhouse lots, 10,000sf of office space, 5,000sf of retail space, and a 10,000sf community center. The master plan for water facilities included the extension of central water to serve Evergreen Village and the surrounding properties. A water main network was designed and analyzed utilizing WaterCAD hydraulic modeling. Fire flow and service demands were developed using local codes. The resulting network consisted of approximately 30,300 LF of 8" and 12" water mains. The master plan for sewage facilities required the design of an extension of the central sewer to serve Evergreen Village and the surrounding properties. The extension consisted of one major outfall served by a pump station and force main. The required capacity of the sanitary sewer outfall was determined based on planned land use within the sewer shed, with flows computed in accordance with local codes. The resulting sewer plan consisted of approximately 26,000 LF of 8", 10" and 12" gravity sewer and provision for 1,700 LF of forcemain to service a sewer shed of over 1,100 acres.

## INFRASTRUCTURE ENGINEERING EXPERIENCE

### LORTON PUMPOVER

#### LORTON, VA

Bowman Consulting worked on this sanitary sewer system to serve the Lorton Valley area development spanning several hundred acres with over 1,000 homes. Due to the proximity of the railroad to this project, a main design issue was a sanitary sewer force main crossing involving the RF&P Railroad. Bowman engineers designed a 2-mile sanitary sewer trunk line with a 1.6 MGD pump station and the associated 10" force main that crossed Interstate 95 and the RF&P Railroad. The crossing of the railroad consisted of jack and bore operations under the tracks and provided emergency shut-off valves and associated safety measures. Bowman Consulting organized and managed the plan approval through Fairfax County. In addition, Bowman Consulting also coordinated the agreement between CSX Transportation, Inc. and Fairfax County as well as provided coordination with MCI Telecommunications.

### LOUDOUN VALLEY ESTATES 24" TRANSMISSION MAIN LOUDOUN COUNTY, VA

Loudoun Valley Estates is an 1,163-acre P.U.D. located on the south sides of Loudoun County Parkway and Ryan Road. Loudoun Valley Estates I consists of 600 townhouses and single family detached units on 298-acres. Loudoun Valley Estates II consists of 2,761 townhouse, single family detached and multi-family units on 865-acres. As part of the Loudoun County Sanitation Authority's master plan for water distribution in the eastern portion of the County, the developer was required to construct a 24" transmission main. The transmission main also provides water for the development. Bowman Consulting produced two construction plans for this 24" transmission main. Phase I consisted of 4,747 feet and Phase II consisted of 4,955 feet of 24" water line. The plans were submitted and approved by Loudoun County Sanitation Authority (LCSA) and the Virginia Department of Health (VDH).

### LOUDOUN VALLEY ESTATES HYDRALIC MODELING LOUDOUN COUNTY, VA

Loudoun Valley Estates II is an 865-acre P.U.D. which contains 2,761 single-family, townhouse and multi-family dwelling units, a 30-acre middle school site, 100,000

square feet of commercial development, and a 26,000 square foot recreation center. As part of the initial planning of which landbays would be developed first and in what order, the need for a hydraulic model became apparent. Domestic demands based on land use were developed as well as appropriate fire flow demands. Three boundary conditions were established as fixed grade nodes modeled as reservoirs. Four construction staging scenarios were modeled, each with average daily demand, peak hour demand and maximum daily demand plus fire flow. Modeling software used was WaterCAD version 5.0 by Haestad Methods, Inc. After the four construction staging scenarios were established and shown to meet the pressure and flow requirements of Loudoun County Sanitation Authority (LCSA), the model was re-evaluated. By running addition scenarios it was determined that a 4,000 foot long piece of 16" waterline could be removed by up sizing 6,200 feet of 12" waterline to 16" waterline.

### WILLISVILLE WASTEWATER TREATMENT SYSTEM LOUDOUN COUNTY, VA

After failing on-site wastewater systems were identified in the community of Willisville, Loudoun County received funding from the Virginia State Department of Environmental Quality to repair or replace the failing systems. Bowman Consulting developed the design of the "Willisville Community Wastewater Treatment System" for Loudoun County, in coordination with the Loudoun County Sanitation Authority, Loudoun County Health Department, and the Virginia State Department of Environmental Quality. The project consisted of the design and preparation of construction drawings for a sanitary collection, treatment and disposal system for approximately 11 properties within the community of Willisville. The system consists of approximately 1000 feet of low-pressure sewer, 800 feet of gravity sewer, a pre-treatment system, and an effluent drainfield.

## MICHAEL P. POINTER, A.S.L.A.

Principal-in-Charge

Mr. Pointer brings over 22 years of planning and civil engineering experience in all aspects of land development with numerous commercial, residential and municipal projects in Loudoun County, Fairfax County, Prince William County Virginia, Frederick County, Warren County, Shenandoah County and numerous towns throughout Virginia.

He is responsible for concept development planning for rezoning applications and special use permits, and master plans through detailed subdivision site planning and construction plans and profiles. As Branch Manager for the Winchester office, he oversees planning, engineering, and surveying services in the City of Winchester, Clarke and Frederick Counties, Virginia and points west.

### PROFESSIONAL EDUCATION

Bachelor of Science, Landscape Architecture,  
West Virginia University, 1986

### PROFESSIONAL REGISTRATION

Certified Landscape Architect, Virginia

### PROFESSIONAL AFFILIATIONS/ ACTIVITIES

American Society of Landscape Architects  
(ASLA)

### REPRESENTATIVE PROJECTS

#### JEFFERSON MEMORIAL HOSPITAL, JEFFERSON COUNTY, WV

Principal-in-Charge of annexation, rezoning, and schematic plans for the future site of this new hospital facility. To date, an ALTA survey and topographic mapping with GPS controls have been performed. In addition preliminary grading and drainage plans, preliminary water and sewer plans, preliminary stormwater management plans and infrastructure planning for access to the hospital site have been completed.

#### CITY HOSPITAL OF MARTINSBURG, MARTINSBURG, WV

Principal-in-Charge contracted with the West Virginia University Hospitals—East (WVUH-E) to assess alternative access points to the existing facility including possible improvements to Dry Run Road, the main access road to the hospital. Services included topographic mapping, utility locating, hospital expansion planning, and campus master planning.

#### LIBERTY RUN, BERKELEY COUNTY, WV

Principal-in-Charge for this expansive 3410-lot community, including detached and attached homes. Services provided included the preparation of a separate site plan for a required pump station for the site. Plan consisted of over 2-miles of force main and was processed through Berkeley County Public Service Sewer District and then through the State's Health and Human Resources Department.

#### BERKELEY BUSINESS CENTER, BERKELEY COUNTY, WV

Served as Principal-in-Charge for this redevelopment project. Project consisted of transforming existing 400,000 sq. ft. building warehouse truck center.

#### WINCHESTER GREEN CIRCLE, CITY OF WINCHESTER, VA

Principal-in-Charge for the development of the Winchester Green Circle Project, a walking and biking trail following Town Run and Abrams Creek, encircling the City of Winchester. The project provides safe bike and pedestrian facilities for the entire community. Bowman Consulting assisted in the development and implementation of two bio-retention facilities, including an innovative rain garden, to reduce stormwater run-off on the site. The facilities when complete will be the first ever installed in the City. Services for the rain garden include performing a topographical survey to establish the location of existing trees throughout the site and to establish a site for the facility.

**J.W. CODY FRANCIS,  
P.E.**

Director of Engineering

With over 12 years of experience, Mr. Francis brings a solid background in civil engineering and project management. His experience covers the final design of roads, the development of site plans and floodplain studies, Best Management Practices and the design of stormwater management systems. Additionally, Cody has extensive jurisdictional knowledge of Loudoun County and its surrounding areas.

**PROFESSIONAL EDUCATION**

BS, Civil Engineering, Brigham Young University, 1995

**PROFESSIONAL REGISTRATION**

Professional Engineer, West Virginia

**REPRESENTATIVE PROJECTS**

**BERKELEY BUSINESS PARK, BERKELEY COUNTY, WV**

Director of Engineering for this three phase redevelopment project consisting of transforming the former Corning Glass Facility, an existing 400,000 sq. ft. facility, into a warehouse distribution center, and developing 90,000sf of retail/office space along the Route 11 frontage of the business park.

**PRINCETON SHOALS, BERKELEY COUNTY, WV**

Director of Engineering for this 250-lot single-family detached subdivision in Berkeley County. Full construction plans for streets and stormwater management were provided, and extensive coordination with adjacent properties was required.

**MARTINSBURG PUBLIC SAFETY CENTER, MARTINSBURG, WV**

Director of Engineering for the construction of a new police/fire/EMS building. Scope of services included feasibility studies on three different parcels, a concept grading plan, site plan, and associated stormwater management design, water system analysis, and stormwater pollution prevention plan. Surveying included GPS horizontal and vertical control by GPS, boundary, field run topography, and location of utilities.

**WVUH-EAST CITY HOSPITAL, MARTINSBURG, WV**

Director of Engineering of general consulting services contract with WVUH-E. Services include topographic mapping, utility locating and mapping, city hospital parking and facilities expansions, analysis of existing traffic patterns and engineering improvements to entrances and stormwater management design. Also contracted with the architects chosen to prepare campus facility assessment and expansion master planning.

## DAVID T. FRANKENFIELD, L.S.

Director of Surveys

With over 19 years of surveying experience, Mr. Frankenfield is an expert in survey software, including AutoCAD, CMLSE and SDC. In addition, he contributed significantly to the establishment of Bowman Consulting's survey department software standards. Mr. Frankenfield's primary duties include quality control of field crew work, management of the day-to-day department operations, and oversight of survey work conformance with both industry and company standards.

Mr. Frankenfield's experience includes boundary surveys, ALTA surveys, horizontal position sheets, wetland locations, subdivisions, locations for utilities, cut sheets, metes and bounds descriptions, easement plats, record plats, house location surveys, and deed and document research.

### PROFESSIONAL EDUCATION

Associate of Applied Science, Civil Engineering, Northern Virginia Community College, 1987

### PROFESSIONAL REGISTRATION

Licensed Land Surveyor, West Virginia

### REPRESENTATIVE PROJECTS

#### CITY HOSPITAL OF MARTINSBURG, MARTINSBURG, WV

Director of Surveys of general consulting contract with the West Virginia University Hospitals – East (WVUH-E) to assess alternative access points to the existing facility including possible improvements to Dry Run Road, the main access road to the hospital and the possible expansion of the medical campus. Extensive utility locating was completed.

#### JEFFERSON MEMORIAL HOSPITAL, CITY OF CHARLESTOWN, WV

Director of Surveys for ALTA surveys and topographic mapping with GPS control.

#### WINEBRENNER'S CROSSING, BERKELEY COUNTY, WV

Director of Surveys for this 961-lot subdivision community on over 300-acres. Scope of services provided include civil engineering, planning, surveying and environmental sciences. Extensive coordination was required with geotechnical engineers and the Department of Environmental Protection to remediate sink holes found on-site.

#### LIBERTY RUN, PHASE 1, BERKELEY COUNTY, WV

Project comprised of 48 townhouse lots, 43 single family detached lots and a 10,000 l.f. sanitary sewer force main. The water and sewer services comprised of 5,533 l.f. of water main and 3,558 l.f. of sanitary sewer. Director of Surveys in charge of stake for construction all infrastructure and utilities per the approved plans and to as-built plans at the completion of the project to Berkeley County and to the Berkeley County Public Service Water District and Sewer District.

**RON M. ROBISON,  
C.P.S.S., A.O.S.E.**

Principal and Senior Soil Scientist

With over 25 years of experience, Mr. Robison has an extensive portfolio of work including the design and installation of geothermal well systems, design of individual and community sewage treatment and disposal systems, soil evaluations, and testing and environmental assessments. His experience includes Phase I and Phase II environmental site assessments, hydrogeologic investigations, underground and above-ground fuel storage tank closures, ground-water and soil remediation, and asbestos surveys. He has worked with the Virginia Petroleum Storage Tank Program, and with the Voluntary Remediation Program which is designed to facilitate property transfers and encourage development on previously contaminated sites. Mr. Robison is actively involved in the expansion of the environmental science services work of the firm, and in establishing the firm's site soil evaluation and design practice.

Mr. Robison specializes in Piedmont, Coastal Plain, and Valley/Ridge geology and soils. He frequently provides expert testimony regarding soil science and sewage treatment technologies for VDOT and various area law firms. He provides soil mapping for unmapped areas in various counties, especially in Fairfax County where the identification of alluvial soils and other problem soils is required. Mr. Robison participates in every stage of the project from initial concept to completion, and ensures technical accuracy and clarity of the final product.

**PROFESSIONAL EDUCATION**

BS, Physical Geology and Geography  
James Madison University, 1982

**PROFESSIONAL REGISTRATION**

Certified Professional Soil Scientist, Virginia  
Authorized On-site Soil Evaluator, Virginia  
Dept. of Health

**PROFESSIONAL AFFILIATIONS/  
ACTIVITIES**

Virginia Department of Health – Committee  
for ADSE Program  
Virginia Association of Professional Soil  
Scientist (VAPSS)  
Soil Science Society of America (SSSA)

[www.bowmanconsulting.com](http://www.bowmanconsulting.com)

**REPRESENTATIVE PROJECTS**

**AUDUBON SOCIETY BIRD SANCTUARY, TOWN OF CLIFTON, VA**  
Provided environmental assessment studies for this 17 Acre bird sanctuary park at the end of Chestnut Street in the Town. I prepared all soil evaluation, environmental impact and water supply studies required for the establishment of the Client's Office and Classroom facility.

**CLEARBROOK VDOT WELCOME CENTER, I-81, WINCHESTER, VA**  
Principal-in-Charge. Designed a closed-loop geothermal system for this VDOT tourism welcome center which is expected to receive Silver LEED Certification.

**RIVERBEND GOLF AND COUNTRY CLUB, GREAT FALLS, VA**  
Provided layout design for expansive sewage disposal system. Performed all soil and geologic analysis of materials, and assessed their suitability for use in on-site sewage disposal. Conducted nitrate loading studies and water mounding analysis for this 10,000 gallon per day mass system. All local, state and federal permitting associated with the development of the system was provided by Mr. Robison, along with construction inspection and management of the system. Mr. Robison provided oversight for all groundwater monitoring, sampling, and reporting for continued use of the facility.

**LOUDOUN COUNTY PUBLIC SCHOOLS, LOUDOUN COUNTY, VA**  
Working with LCPS on the Lenah Road project for MS-5 and HS-7. Project includes an environmental site assessment, stream assessments and mitigation evaluation, and a tree location survey.

**O'CONNOR SITE - STREAM ASSESSMENTS & EVALUATIONS, LOUDOUN COUNTY, VA**

Supervised detailed field assessments along those streams located within the project limits, and identified potential candidates for restoration and enhancement activities. The field assessments included the following: a geomorphic channel assessment to determine the classification, natural variability, and the dimension, pattern, and profile of each stream reach; the selection of an onsite representative reach or other reference reach for stability analyses; stability analysis; sediment impact assessment; general instream habitat assessment; field-determination of the bankfull elevation; an evaluation of the existing riparian buffer; and an analysis of the removal of the existing pond embankment to restore a stream channel, and the potential to create adjacent wetlands. Special features that may affect the conceptual and final designs were also identified and marked.

**GRASSLANDS MITIGATION PROJECT, LOUDOUN COUNTY, VA**  
Developed a conceptual offsite stream and wetland mitigation plan at the 204-acre property to satisfy the mitigation requirements of the Arcola Center project, including the restoration of 2,400 linear feet of stream, 24 acres of riparian buffer plantings, and 3.4 acres of wetland creation. Assisted with the development of a conceptual wetland and stream mitigation bank plan for remainder of the property.

**DIRTING/OATES PROPERTY, BERKELEY COUNTY, WEST VIRGINIA**  
Supervised a wetland delineation on the 847-acre property and coordinated a Jurisdictional Determination from the U.S. ACOE. Conducted baseline stream sampling along five reaches, consisting of both physicochemical sampling and benthic macroinvertebrate sampling per EPA's Rapid Bioassessment Protocol (Second Edition). Final report included a summary of the sampling results and an assessment of water quality and aquatic habitat.

**RUSSELL R. SMITH,  
P.E.**

QA / QC

With over 30 years experience in civil engineering and site design, Mr. Smith serves as Director of Engineering for Bowman Consulting's Prince William office. His extensive experience includes the design and management of many projects for Schools, churches, government facilities, assisted living quarters and retirement homes, as well as hotels, fire stations, office buildings and commercial / retail projects.

Mr. Smith's responsibilities include overall project management and design assistance on projects, with specialties in site planning, stormwater management, grading and drainage, water distribution systems, site evaluations and code studies, construction specifications and cost estimating. His responsibilities also include project scheduling, quality control and plan review and client relations. Additionally, Mr. Smith has extensive expertise in re-zoning, special exception, special use and construction permit processing in Fairfax, Prince William, Loudoun, Stafford, Henrico and Arlington Counties, the Cities of Alexandria, Winchester and Fairfax in northern Virginia, as well as Montgomery, Howard, Anne Arundel, Charles and Prince George's Counties in Maryland, and in the District of Columbia.

**PROFESSIONAL EDUCATION**

Bachelor of Science, Mechanical Engineering,  
Virginia Tech, 1974

**PROFESSIONAL REGISTRATION**

Professional Engineer, Commonwealth of  
Virginia

**REPRESENTATIVE PROJECTS****WESTMORELAND STATE PARK VISITOR'S CENTER, WESTMORELAND COUNTY, VA**

This Commonwealth of Virginia Department of Parks and Recreation project, administered by the Bureau of Capital Outlay Management (BCOM), includes design for a new Park Visitor's Center and office structure overlooking the Potomac River, with access and parking provisions for personal vehicles and large recreational vehicles. The project also includes widening and improvement of several hundred feet of existing paved access road, provision of new water service and a sanitary septic system and design of innovative and Low Impact Design (LID) practices for stormwater management quality and quantity control facilities. The work includes provision of full construction documents, construction specifications, cost estimating, VSMP / SWPPP application and report and construction administration services.

**A.O.L. CHILDCARE CENTER, LOUDOUN COUNTY, VA**

P.E. in charge and design engineer for this LEED Gold-rated Child Development Center on the AOL campus in Dulles, Virginia. The project featured preservation of existing open space and forested areas, design of special outdoor play areas using modular play equipment and a water play park facility, and design of parking and site access. Special attention was paid to providing extensive erosion and sediment control measures for protection of the surrounding undeveloped areas.

**MANASSAS CITY PUBLIC SCHOOLS ON-CALL CONTRACT, MANASSAS, VA**

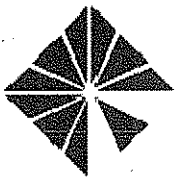
Project Manager for civil engineering projects on the MCPS buildings in Manassas. The first project under the contract was begun in August, 2008 and included the topographic and boundary survey of the entire multi-parcel educational campus within the City of Manassas, including the Baldwin Elementary School site, the Osborne High School site, several adjacent school-owned parcels, and the School Administration Headquarters on Tudor Lane. The work also includes preparation and processing of a Consolidation Plat to consolidate all the parcels into one property, and provision of back-up exhibits and Flood Plain Elimination Plat to eliminate a FEMA flood plain that affects the Elementary School and High School sites.

**COUGAR UPPER ELEMENTARY SCHOOL, CITY OF MANASSAS PARK, VA**

Bowman Consulting provided civil engineering services for this LEED, Gold-rated school project which includes two new buildings constructed adjacent to the existing Cougar Elementary School. The new buildings are targeted to become the first LEED Gold-rated school project in Virginia. The project design included extensive demolition of existing facilities and construction of expanded parking and site access; separation of bus and private vehicle traffic; development of a geothermal well and piping system for the new HVAC system; relocation and expansion of existing natural gas service and electrical service to the site; grading and drainage; and the relocation and extension of sanitary sewer and water distribution systems.

**Creating Communities That Work**

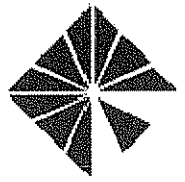




**WASTE WATER MANAGEMENT, INC.**

# **COMPANY PROFILE**

**Waste Water Management, Inc.**  
2815 Hartland Road  
Falls Church, VA 22043  
703-846-0098  
[www.wwmi.net](http://www.wwmi.net)



## EXECUTIVE SUMMARY

---

Waste Water Management, Inc. (WWM), headquartered in Falls Church, VA is a registered Small Business Entity (SBE #P0894363) professional services engineering corporation. David Rigby, P.E., founder and current President of WWM, has over 35 years of experience in the planning, design, construction, operation and financing of municipal, industrial and private water and wastewater piping, pumping and treatment systems. WWM typical scopes of services includes planning, existing facility analysis, operations assessments, engineering reports, preliminary engineering design, detailed engineering, bidding, contract document preparation, contract management, construction inspection, shop drawing review, start-up assistance, and as-built drawings. WWM is also internationally recognized for its experience in industrial process assessment and treatment design, and for its capabilities in forensic evaluation and expert testimony.

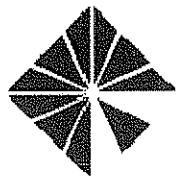
WWM is nationally recognized for its expertise in the analysis and design of complex hydraulic systems, industrial wastewater process evaluation, and treatment systems. WWM provides engineering, consulting, and design services throughout the mid-Atlantic region of the United States for all types of water and wastewater system needs including operation and maintenance performance assessments, asset management, facility upgrades, new utility development, financial planning, grant and loan management and environmental permitting. WWM is internationally recognized for its expertise in the fields of environmental policy development, industrial waste management and regionalization, waste minimization, and the application of appropriate technologies.

WWM has successfully completed over 200 major wastewater treatment design and construction projects, and we developed the first project funded through the EPA Construction Grants Program in the 1970s. WWM is also known for its expertise in the analysis and design of complex hydraulic and pumping systems for water, sewage, stormwater and industrial process water applications. At any time, WWM may have as many as 20 pumping projects on its active project list. For the past 35 years, WWM and its team of engineers have designed over 500 major pumping projects throughout the United States. WWM's principal, David Rigby, is a long standing adjunct professor of graduate environmental and civil engineering studies at The George Washington University in Washington, DC. Among his teaching assignments is Advanced Sanitary Engineering Design which he commonly refers to as "Applied Fluid Mechanics" and / or "Pumping System Hydraulics". In that course, Mr. Rigby teaches the three governing equations for closed pipe hydraulics being "Continuity", "Energy", and "Momentum". He also teaches single and parallel force main hydraulics, multiple and variable speed pumping applications, design of water booster stations, cavitation and its causes and techniques for mitigation, ground and elevated water storage tank siting criteria, hydropneumatic tank sizing, gravity sanitary and storm sewer design, and inverted siphon design.

## EXECUTIVE HIGHLIGHTS

---

- ◆ Completion of over 150 major water and wastewater design projects for municipalities.
- ◆ Completion of over 300 major water and wastewater design projects for industrial, commercial, and residential clients.
- ◆ Planned numerous new town, city, and country-wide water and sewer projects, including treatment.
- ◆ Responsible for the design and project management of the first project ever funded by The Environmental Protection Agency's "Construction Grants Program" in the United States.
- ◆ Designed the 266 MGD Edmonston Stormwater Pumping Station project featured in the Washington Post and currently nominated for the ASCE national design award of excellence.
- ◆ Designed hundreds of miles of water and sewer lines with experience ranging in size from 4" – 60" diameter.
- ◆ Strong history of working with municipalities including the City of Roanoke (60 MGD). Kit Kiser, Director of Public Works, and Charlie Huffine, City Engineer, would openly say, "we turn to you for all the hard (treatment and pumping) projects."



## COMPANY PROFILE

The key to successful project execution is having the right people for the job, organized in a structure to maximize responsiveness. WWM offers extensive in-house expertise and principal level expert consultation services. Our team allows us to call on a broad spectrum of expert services without being burdened by the overhead associated with that expertise. WWM can offer full services for the rehabilitation and capacity analysis of the existing McLean Pumping Station.

WWM employs the following engineering staff, all of which have worked extensively across the state of Virginia:

- ◆ David J. Rigby, PE – Sanitary, Hydraulic, Process, Mechanical, Value Engineering, Licensed Wastewater Operator; 35+ years
- ◆ David Hanna, PE – Pumping System Hydraulics, Quality Assurance and Control; 35+ years
- ◆ Mike Rossi, PE – Hydraulics, Piping, Water Treatment, Project Management; 15+ years
- ◆ Huy Nguyen – Hydraulic and Mechanical Engineering; 10+ years
- ◆ Arbina Shrestha – Sanitary and Environmental Engineering, 8+ years
- ◆ Nick Valcourt – Process and Project Engineering, 1+ years

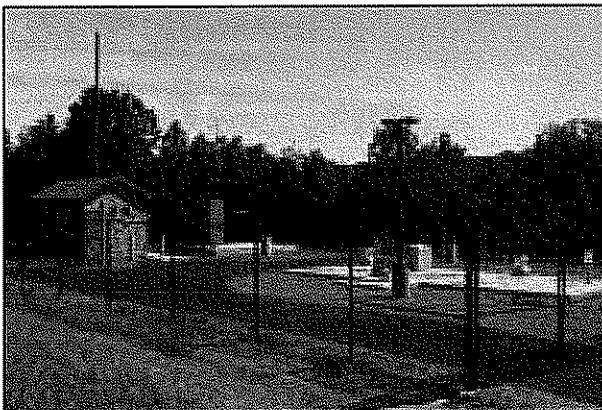
WWM's project managers and design engineers hold degrees in their field of expertise, are professionally licensed or in the process of becoming licensed, experienced, and well qualified. WWM's engineering staff is proficient in AutoCAD 2006, AutoCAD Civil 3D, Haested Methods WaterCAD, ArcGIS, EPANET 2.0, EPA SWMM 5.0, and Microsoft Office applications. Additionally, WWM maintains a continually updated database of hydraulic, structural, and civil programs which have been written by in-house staff. These programs are based on accepted design standards, industry practices, and engineering experience. All of these technical tools are enhanced by the individual principal and senior level engineers' extensive experience gained throughout their careers.

## PROJECT EXPERIENCE

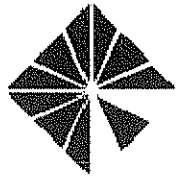
In May 1979, our very first project was the Town of Fincastle, VA wastewater treatment plant and collection system. That system employed a Hinde diffused lagoon aeration system with a rated capacity of 75,000 gpd. In 2004, the Town turned again to us to assist in the upgrade and expansion of the wastewater treatment plant to 130,000 gpd. WWM and its President bring the experience of more than 100 domestic wastewater treatment plants and more than 80 industrial wastewater treatment plants to the project. In addition to the planning, design, and construction management project experience, WWM and its President have extensive hands on experience in both construction and treatment plant operations. As a licensed General Contractor Class A and Water and Wastewater Operator Class I, WWM brings to the project a comprehensive package of professional capabilities unparalleled in the industry.

WWM is a recognized leader in the design of municipal and industrial water and wastewater treatment plants and pumping stations with extensive experience in the preparation of preliminary assessments and reports, budget cost estimates, final engineering documents, and in the performance of construction phase activities.

From the influent piping through the treatment or pumping facilities and out to the discharge point, WWM views a water or wastewater treatment plant or pumping station as a complete system not just an assemblage of the individual parts. WWM also has expertise in water distribution system analysis, mechanical sewer design and electrical and SCADA control design and can select and integrate all the proper components into an overall operating system. WWM's staff of degreed and licensed engineers are highly capable of developing physical, chemical and biological process designs to meet specific permit requirements and for the subsequent selection of the most appropriate, efficient and economical equipment.

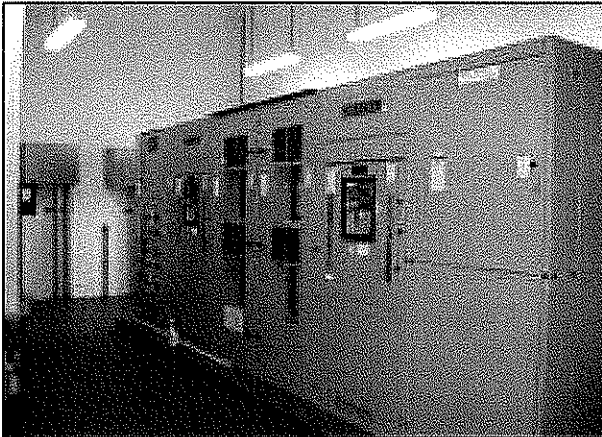


Due to its extensive hands on construction and operations experience WWM designs are easily constructed and are as maintenance free and operationally straight forward as possible. WWM designed facilities are accessible and well lit, easy to clean and maintain, making emergency repairs easier to perform. WWM has expertise with constant speed and variable speed controllers, flow metering, and SCADA. WWM's design engineers work seamlessly with its core



electrical power and structural engineering sub-consultants in order to design treatment plants stations and pump stations that are reliable, cost efficient, and aesthetically pleasing.

WWM has completed numerous projects for the Prince William County Service Authority and has a close relationship with its Engineering and Operations Department. Working with the Service Authority, WWM has developed the Service Authority's standard large flow pump stations. These pump stations include a monolithic comminutor vault / wet well / meter vault structure with associated control building, emergency generator, SCADA, and future provisions for odor control equipment.



WWM employs professional engineers and scientists in the fields of hydraulic engineering and advanced wastewater treatment process engineering. WWM has developed expertise with the use of computer hydraulic models and has generated numerous models for municipal water distribution systems and for municipal wastewater treatment plants. WWM utilizes computerized hydraulic modeling to analyze the interaction of multiple pumping stations tied into common force mains. Software that WWM uses includes Haestad Methods WaterCAD and EPANET 2.0. WWM also uses SWMM to model gravity sewer systems and BioWin to model wastewater treatment plant performance.

#### **Wastewater Treatment Plants**

Town of Montross, Westmoreland County VA  
 City of Danville, Danville VA  
 Town of Chincoteague, Accomack County, VA  
 Town of Hamilton, Loudoun County, VA  
 Town of Fincastle, Botetourt County, VA  
 Gesher Jewish Day School, Fairfax County VA  
 Evergreen Country Club, Prince William County VA  
 Warrenton Chase, Fauquier County, VA  
 Widewater, Stafford County, VA

#### **Sewage Pumping Facilities**

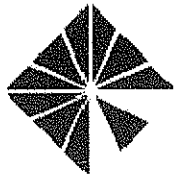
Timber Truss, Orange County, VA  
 Stafford Commerce Park, Stafford County, VA  
 Rappahanock Landing, Stafford County, VA  
 Cabin Run, Prince William County, VA  
 Mayfield Trace, Prince William County, VA  
 Belmont, Loudoun County, VA  
 Cedarcrest, Loudoun County, VA  
 Gunston Commerce, Fairfax County, VA  
 Lorton, Fairfax County, VA

#### **Water and Sewer Systems**

Potomac Crossing, Westmoreland County, VA  
 Town of Chincoteague, Accomack County, VA  
 Botetourt County VA Comprehensive Water and Sewer systems  
 Town of Hamilton, 50 Year Water and Sewer Master Plan  
 Town of Kilmarnock, VA, Water and Sewer Master Plan  
 Town of Purcellville, VA, Sewer Master Plan

#### **Water Storage Tanks, Main Replacements/Extensions, and Treatment Plants**

Lovettsville Development Partners, Loudoun County, VA  
 Hamilton, Loudoun County, VA  
 Ladysmith, Caroline County, VA  
 Lovettsville Retirement Village, Loudoun County, VA



Town of Hamilton, VA

**Stormwater Pumping Facilities**

Edmonston, Prince George's County, MD

**Construction Administration**

Route 20 Sewer, Orange County, VA

Warrenton Chase WWTP, Fauquier County VA

Hamilton Water System, Loudoun County, VA

Hamilton / Loudoun Sewer Extension Project, Loudoun County, VA

Mountain Vernon Ladies Association of the Union, Fairfax County, VA

**Water System Modeling**

Town of Colonial Beach, Westmoreland County, VA

Town of Hamilton, Loudoun County, VA

Town of Lovettsville, Loudoun County, VA

---

## WARRENTON CHASE TREATMENT PLANT (WWTP) AND SUBSURFACE DISCHARGE

---

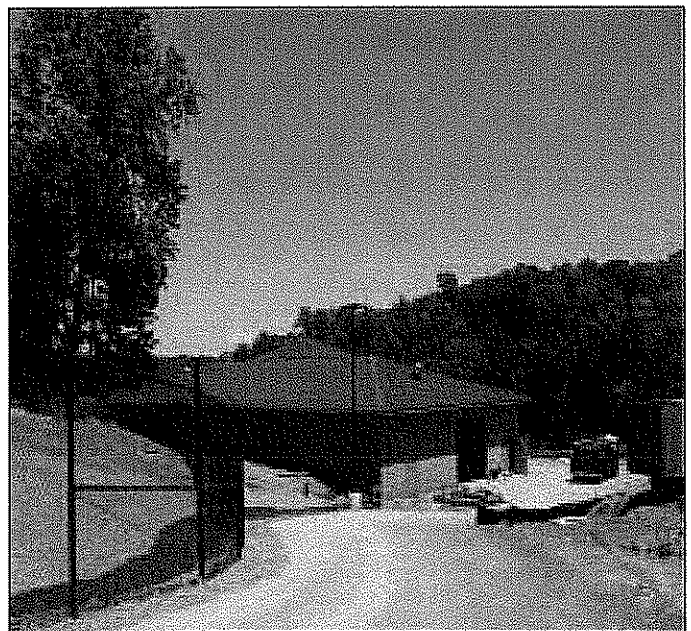
Fauquier County, Virginia

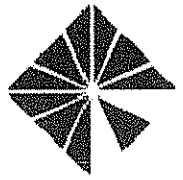
**Project Highlights**

- 60,000 gpd WWTP
- 7.5 acres of drainfields with monitoring wells and drip system tubing
- Lakeside Screen and grit removal
- Aqua Aerobic Dual train SBR system w/ pre- and post-equalization
- Aerobic digester
- Dynasand tertiary filters
- 24 hour emergency effluent storage
- Goulds disposal field dosing pumps
- American Manufacturing disc filtration unit
- 400 kw Standby Generator (also serves adjacent water booster station facility)

**Project Description**

Waste Water Management, Inc. provided complete civil, hydraulic, mechanical, structural, and electrical engineering design services for the wastewater treatment plant (WWTP) at Warrenton Chase, a residential development composed of 150 single family homes. The WWTP is enclosed inside a CMU block building covering 6,000 sf. The treatment process begins with a screenings and grit removal system that drains into a pre-equalization basin. The flow is then pumped into a dual Sequencing Batch Reactor (SBR) that either pumps mixed liquor to an aerobic digester or decants to a post-equalization tank. The treated effluent in the post-eq tank is pumped through sand filters and a UV disinfection system before being stored in dual underground tanks which provide 24 hours of emergency storage in case of any drainfield disposal issues. These tanks drain to a duplex submersible disposal field dosing pump station. Effluent is pumped through a final disc filtration unit before discharging to a 32 field network of drainfields using ½ inch polyethylene dripper tubing to distribute the final effluent over 7.5 acres. The site was constructed with expandability for a methanol building in case of stricter nutrient limits in the future. Construction cost was approximately \$5.8 million.





## **Project References**

### **Owner**

Toll Brothers Inc.  
43089 Ryan Road, Suite 101  
Ashburn, VA 20148  
(703) 729-0951  
Contact: Jon Cannizzo, P.E.

### **Regulatory Agency**

Fauquier County Water and Sanitation Authority  
7172 Kennedy Road  
Warrenton, VA 20187-1646  
(540) 349-2092  
Contact: Wayne Stephens, P.E.

## **BEL ALTON**

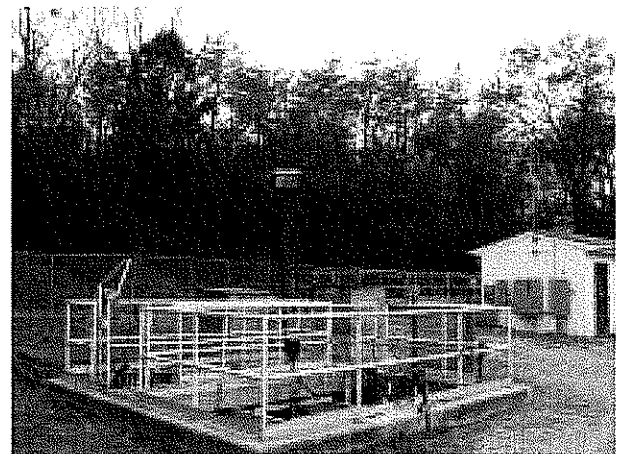
### **Charles County, Maryland**

#### **Project Reference**

JLW Associates  
23464 Hollywood Road  
Leonardtown, MD 20650  
Contact: Michael Baker, Vice President  
Telephone: (301) 475-5747

#### **Project Description**

WWM and JLW are currently working in a Design/Build team arrangement on the Charles County MD "Bel Alton Wastewater Treatment Plant Improvements" project. This small project is being upgraded in response to the Chesapeake Bay Nutrient Reduction Program and involves maintaining full operating capability of the existing wastewater treatment plant during the construction of the new facilities. The 30% design submittal is in the final stages of review by the Maryland Department of the Environment. Construction completion is scheduled for spring 2009.



## **WIDEWATER**

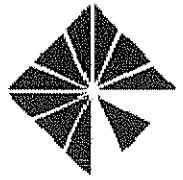
### **Stafford County, Maryland**

#### **Project Highlights**

- Influent equalization control and pumping system
- Four state aerobic – anoxic reactor
- Aerobic sludge digestion and thickening
- Chemical feed systems
- LEED certified laboratory and control building
- SCADA system integration

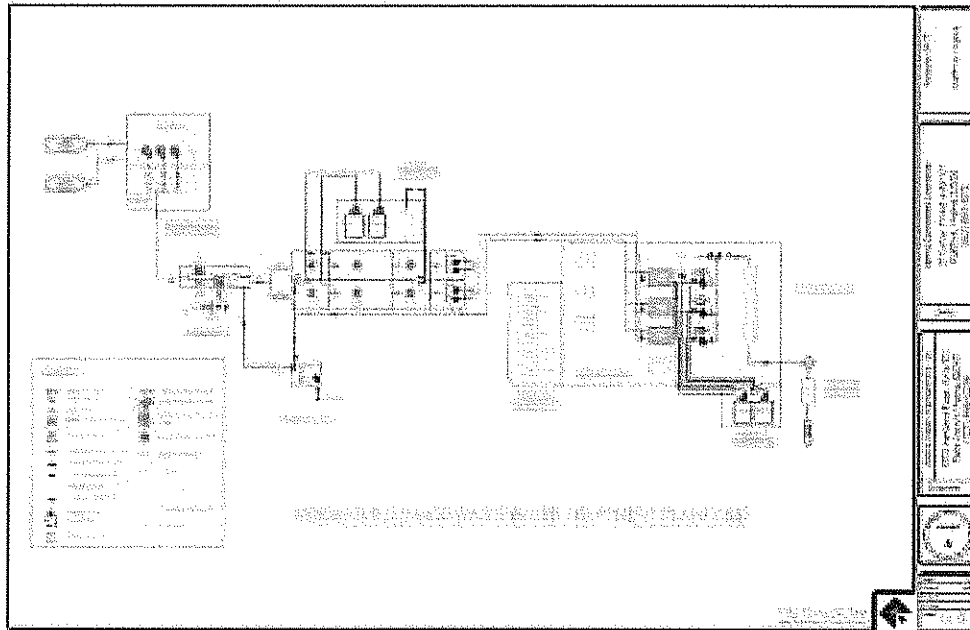
#### **Project Description**

The Widewater wastewater treatment is planned to serve the "Widewater Magisterial District" in accordance with the Stafford County, VA Comprehensive Plan. Originally controlled by the Maryland Department of the Environment it was permitted for an initial flow of 0.50 MDG with expansion to 2.20 MGD. Following an



agreement between the states of Maryland and Virginia, the project now carries a Virginia Pollutant Discharge Elimination System (VPDES) permit issued by the Virginia Department of Environmental Quality. In response to the recently adopted Chesapeake Bay Nutrient Reduction Strategy the permit has been amended to include limits on Nitrogen (3.0 mg/l) and Phosphorous (0.14 mg/l).

Originally proposed as a Sequencing Batch Reactor (SBR) process, recent improvements in membrane bioreactor (MBR) technologies and economics, the proposed project will include an influent equalization control and pumping system, a four stage aerobic - anoxic reactor utilizing low energy high oxygen transfer hyperbolic disc mix air systems for denitrification, an external MBR equipment package, ultraviolet disinfection, aerobic sludge digestion and thickening, chemical feed systems, a LEED certified laboratory and control building, and a SCADA system integrated into the local utility communications program. The initial design submission will be in November 2008.



## TOWN ENGINEER FOR THE TOWN OF HAMILTON, VIRGINIA

Town of Hamilton, Virginia

### Project Description

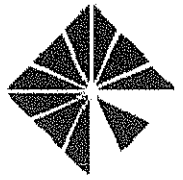
WWM has served as the Town Engineer for over ten years and completed numerous critical infrastructure projects related to the Town of Hamilton's water and sewer systems.

### Water Treatment Plant

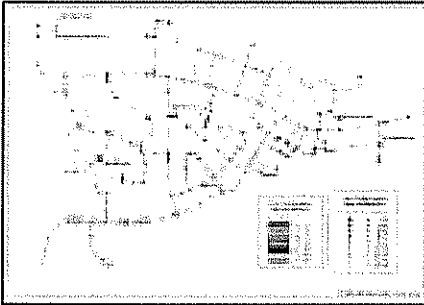
Waste Water Management, Inc. was retained by the Town of Hamilton, Virginia to design a new water treatment plant to serve a new Loudoun County elementary school. Recognizing the need to replace the Town's aging distributed system of groundwater treatment plants and to fully utilize a new high yield well, Waste Water Management, Inc. sized the plant at 400 gpm, which is enough to supply the entire Town. The plant incorporates raw water storage, greensand filtration, disinfection, finished water storage, and distribution pumping systems. A laboratory and storage facilities are also provided. Waste Water Management, Inc. incorporated the new 6500' raw water pipeline into the Town's hydraulic network model.

### Project Highlights

- Two greensand filters 200 gpm each
- 50,000 gallon raw water storage tank
- 200,000 gallon finished water storage tank
- Filter pumps 400 gpm @ 97'



- Distribution pumps 500 gpm @168'
- Chemical Feed Systems
- 300 kw emergency generator
- SCADA



#### **Water Distribution System Model**

As a part of the Town's water system upgrade, a hydraulic and water quality model of the Town's water distribution network was developed. The model was developed using AutoCAD and Haestad Methods WaterCAD. Field determination of friction factors was performed at various locations to calibrate the model, which is now used successfully in the optimal selection of waterline replacement projects. It has also been used to determine the effects of taking various wells out of service.



#### **Stone Eden Well (Well 14)**

WWM developed, designed, and coordinated the permitting of the Town's new Stone Eden Well (Well #14). The well is a high yield well designed to replace the Town's aging distributed system of wells. The project is a part of the Town of Hamilton's Water System Improvements as conceptualized in the Town of Hamilton Water System Preliminary Planning Report, also prepared by WWM.



#### **Harmony Sewage Pump and Water Booster Stations**

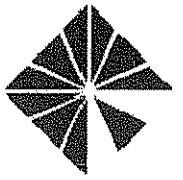
WWM designed the Harmony Intermediate School Sewage Pump Station and Water Booster Stations to serve the new Harmony Middle School and growing western part of the town. The sewage pump station incorporates precast wet well and valve vault structures, ventilation fans, outdoor lighting, and a precast concrete control building. The control system for these stations provides the groundwork for the Town's upcoming SCADA conversion project.

#### **Project Reference**

Town of Hamilton, Virginia  
53 East Colonial Highway  
Hamilton, Virginia 20159

Contacts: Past Mayor Keith Reasoner  
(540) 338-2811  
Email: kreasoner@aol.com



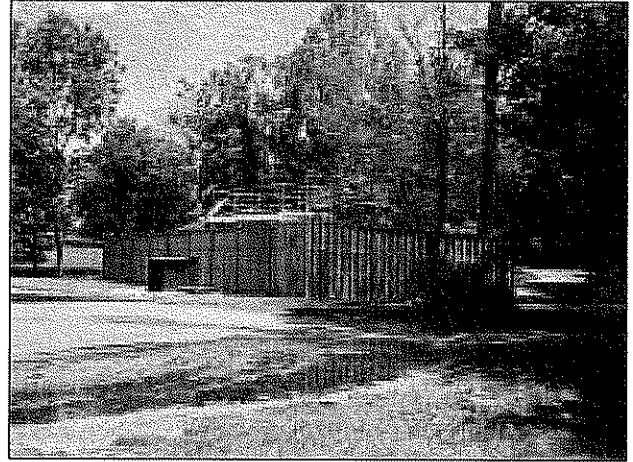


## EVERGREEN COUNTRY CLUB WASTEWATER TREATMENT PLANT

Prince William County, Virginia

### Project Highlights

- 7,500 gpd Dual Train CSBR with Sludge Holding Tank
- Tertiary Filtration with Sand Media
- PLC Controls for Automated Cycle Timing
- UV Disinfection
- 50 KW Standby Generator
- Enclosure for chemical feed and onsite lab equipment
- E-One Package Duplex Grinder Station
- 1-1/2" flowmeter



### Project Description

Waste Water Management, Inc. provided complete civil, hydraulic, mechanical, structural, and electrical engineering design services for Evergreen Country Club Golf Course.

The 7,500 gpd station consists of an influent grinder pump station, dual train Continuous Sequencing Batch Reactor (CSBR) with a sludge holding tank, sand filtration, UV disinfection, and post aeration before discharging to a receiving stream of the Potomac River. The biological system first treats for removal of nitrogen, solids and organics with coarse bubble diffused air. The effluent is decanted into tertiary sand filters which act as a second barrier to remove solid contaminants. Final treatment involves disinfection with UV light and post aeration to meet State regulations for dissolved oxygen concentration. A programmable logic controller (PLC) was installed for controlling the system.

### Owner

Evergreen Country Club  
15900 Berkeley Drive  
Haymarket, Virginia 20169  
(703) 754-4778

Contact: Dave Anderson

### Equipment Supplier

Kappe Associates  
P.O. Box 7986  
Charlottesville, VA 22906  
(434) 985-7090

Contact: George Long

### Regulatory Agency

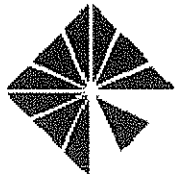
Virginia Department of Environmental Quality  
Northern Virginia Regional Office  
13901 Crown Court  
Woodbridge, Virginia 22193  
(703) 583-3903

## LOVETTSVILLE WATER SYSTEM

Loudoun County, Virginia

### Project Highlights

- Water Main Extension – 13,000' of 8" and 6" main
- 400 gpm Water Treatment Plant with iron and manganese removal
- 300 gpm Water Treatment Plant with iron and manganese removal



- 158,000 gallon water storage tank
- Backwash pump station and force main
- Design of SCADA system



#### **Project Description**

Waste Water Management, Inc. was the Engineer on a variety of public and private water system projects for the Town of Lovettsville, Virginia. A complete hydraulic analysis of the Town's existing distribution system was performed using Haestad Methods WaterCAD. Areas of substandard pressure were identified and the distribution systems serving subsequent developments were designed to remedy this. Two potable water treatment plants with filtration, chlorination, and storage tanks were designed to serve development. A new SCADA system was designed to monitor the Town's existing and new facilities. Cost of water plants was approximately \$2.5 million.

#### **Clients**

JGS Residential, LLC  
5126 Harford Road  
Baltimore, Maryland 21214  
(410) 426-5000

Contact: Jim Sakellaris

Town of Lovettsville, Virginia  
6 East Pennsylvania Avenue  
Lovettsville, Virginia 20180  
(540) 822-5788

Contact: Mayor Elaine Walker

#### **Contractor**

Structures and Utilities  
3381 Torrey Pines Circle  
Riner, Virginia 24149  
(540) 382-3967

Contact: Dewey Lusk

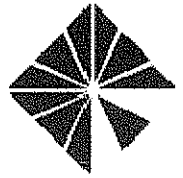
## **GESHER JEWISH DAY SCHOOL ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM**

Fairfax County, Virginia

#### **Project Highlights**

- 3,000 gpd CSBR train (6,000 gpd future)
- 7,000 gallon influent septic tank
- 13' deep wet well with duplex submersible grinder pumps rated at 25 gpm
- Valve vault with 2" flowmeter
- Weathershed for controls including PLC and Autodialer system for alarm conditions
- Discharge to drainfields with 5,972 gpd capacity (2 sites)
- Privacy slat fencing



**Project Description**

Waste Water Management, Inc. provided complete civil, hydraulic, mechanical, architectural, structural, and electrical engineering design services for Geshar, the first Jewish Day School to open in Northern Virginia. The 3,000 gpd station consists of an influent pump station, septic tank and a single train Continuous Sequencing Batch Reactor (CSBR). At an undetermined time in the future, the system will be upgraded to 6,000 gpd capacity by installing a second train CSBR unit. The CSBR receives flow from the septic tank continuously during its biological treatment process to remove total nitrogen to a discharge limit of 7 mg/l. When the School is in use, the process train discharges to the drainfield. When the School is not in use such as during weekends, holidays and nights, the system recycles the effluent to the septic tank which serves as a food source during these periods. A programmable logic controller (PLC) was installed to control the cycle times and to control the discharge to each drainfield. An autodialer alarm was provided to notify the operator of any alarm conditions. Due to the proximity of the site to the School, privacy slat fencing was installed at the request of the Owner.

**Owner's Representative**

RMK Enterprises, LLC  
3819 Prince William Drive  
Fairfax, VA 22031  
(703) 764-9399

Contact: Ron Katz

**Regulatory Agency**

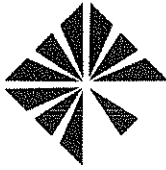
Fairfax County Division of Environmental Health  
Onsite Sewage & Water Section  
10777 Main Street  
Fairfax, Virginia 22030  
(703) 246-8463

Contact: Marty Shannon

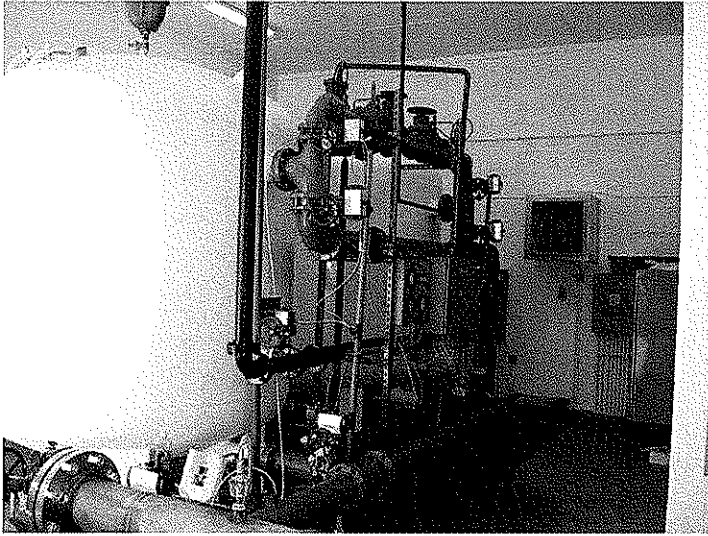
**General Contractor**

Scott-Long Construction, Inc.  
14170 Newbrook Drive  
Chantilly, Virginia 20151  
(703) 802-7617

Contact: Brett Miller



## **Lovettsville Retirement Village Loudoun County, Virginia**



### **Project Highlights**

- 300 gpm water treatment plant with iron and manganese removal filters
- 158,000 gallon finished water storage tank
- 300 gpm seven stage vertical turbine well pump
- Triplex skid mounted booster pumps each rate at 500 gpm @ 260' TDH
- 12' diameter 19' deep backwash equalization tank with duplex submersible pumps
- SCADA system per LCSA standards

### **Clients**

US Home Corporation, Inc.  
3554 Chain Bridge Road, Suite 100  
Fairfax, VA 22030  
(703) 359-6200

*Contact: Don Fink*

### **Contractor**

Structures and Utilities  
3381 Torrey Pines Circle  
Riner, Virginia 24149  
(540) 382-3967

*Contact: Dewey Lusk*

### **Project Description**

Waste Water Management, Inc. was the Engineer on a variety of public and private water system projects for the Town of Lovettsville, Virginia. A complete hydraulic analysis of the Town's existing distribution system was performed using Haestad Methods WaterCAD. Areas of substandard pressure were identified and the distribution systems serving subsequent developments were designed to remedy this. Two potable water treatment plants with filtration, chlorination, and storage tanks were designed to serve development. A new SCADA system was designed to monitor the Town's existing and new facilities. Cost of water plants was approximately \$2.5 million.



## **Town of Hamilton Water Treatment Plant Loudoun County, Virginia**



### **Project Highlights**

- Two iron and manganese removal filters 200 gpm each
- 50,000 gallon raw water storage tank
- 200,000 gallon finished water storage tank
- Filter pumps 400 gpm @ 97'
- Distribution pumps 500 gpm @ 168'
- Chemical Feed Systems
- 300 kw emergency generator
- SCADA

### **Client / Owner**

Town of Hamilton, Virginia  
53 East Colonial Highway  
Hamilton, Virginia 20159  
(540) 338-2811

*Contact: Past Mayor Keith Reasoner  
Mayor Ray Whitbey*

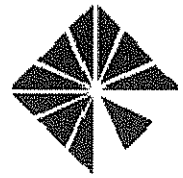
### **Contractor**

Patterson Construction Company, Inc.  
12315 McClain Street  
Fredericksburg, Virginia 22407  
(540) 338-2811

*Contact: Jim Patterson*

### **Project Description**

Waste Water Management, Inc. was retained by the Town of Hamilton, Virginia to design a new water treatment plant to serve a new Loudoun County elementary school. Recognizing the need to replace the Town's aging distributed system of groundwater treatment plants and to fully utilize a new high yield well, Waste Water Management, Inc. sized the plant at 400 gpm, which is enough to supply the entire Town. The plant incorporates raw water storage, greensand filtration, disinfection, finished water storage, and distribution pumping systems. A laboratory and storage facilities are also provided. Waste Water Management, Inc. incorporated the new 6500' raw water pipeline into the Town's hydraulic network model.

**President****PROFILE**

Mr. David Rigby has emerged as a national and international expert in the field of industrial and domestic water and wastewater engineering. With more than thirty five years of experience, both as an entrepreneur and as an executive of Virginia-based firms, he has demonstrated a broad level of expertise in engineering, conservation and environmental issues, as well as business development, corporate finance, and human resources. He is also an Adjunct Professor of Graduate Studies at the George Washington University in the Civil and Environmental Engineering Department (1996 – Present), an Assistant Instructor at George Mason University in the Volgenau School of Information Technology and Engineering (2005), and a Guest Lecturer at the University of Nebraska Department of Civil Engineering.

Prior to becoming founder and president of Waste Water Management, Inc., he founded the environmental consulting firm Clean Water Engineers, Inc. in 1979. Through his leadership, the firm became one of the premiere U.S. water and wastewater planning and engineering design firms serving the water industry in response to the promulgation of the Clean Water Act in 1972. Clean Water Engineers provided services to industries, municipalities, and private developers. In 1986, Mr. Rigby was selected as the U.S. Delegate to the People's Republic of China in the field of Industrial Wastewater Treatment working directly with the Chinese Ministry of Industry. In 1990, Mr. Rigby expanded Clean Water Engineers' practice into Mexico and successfully served water intensive industries throughout the country for several years.

In 1992, Clean Water Engineers was acquired by a consortium of Mitsubishi and Osaka Natural Gas to supplement their international environmental engineering capabilities. As his first assignment, Mr. Rigby led a technical team of engineers, scientists, and economists to Thailand to manage a comprehensive multifaceted project funded by the Asian Development Bank to study and plan for major industrial pollution controls in the industrialized Samut Prakarn region of Bangkok. There he worked directly with the Ministry of Science, Technology, and Environment to identify the magnitude of the industrial pollution in the region, after which he developed a long-range regional pollution reduction plan and identified the framework for the creation of the Thai "EPA" to complete the recommended plan implementation.

Mr. Rigby is an accomplished corporate executive with years of versatile experiences in advanced water and wastewater pumping and treatment systems. He is nationally and internationally recognized for his expertise in industrial wastewater treatment, waste minimization, water supply and wastewater treatment and environmental planning. He is known throughout the industry as a Consultant's Consultant and is often retained by larger firms in an expert capacity for specific advice and support on system planning, complex hydraulic or treatment process designs, and business acquisitions.

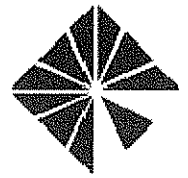
**EDUCATION**

- ◆ Doctor of Science studies in Environmental Engineering and Engineering Management, The George Washington University, January 2001 – Present
- ◆ Ph.D., course study completed in Sanitary Engineering, Virginia Polytechnic Institute and State University, 1978
- ◆ Master of Science, Civil Engineering, Virginia Polytechnic Institute and State University, 1972
- ◆ Bachelor of Science, Civil Engineering, Virginia Polytechnic Institute and State University, 1971
- ◆ Attendance at numerous professional conferences, seminars, and short schools in sanitary and environmental engineering.

**AUTHOR AND PRESENTER**

Mr. Rigby has been an author and presenter at various conferences including:

- ◆ Principal Author: "An Innovative Solution Resolves Political, Inter-Governmental and Technical Constraints", (addressing the Gunston Commerce Center Pump Station and Force Main), ASCE "Pipelines" Conference, 2003.
- ◆ Presenter: Georgia Tech Food Industry Environmental Conferences, 1990, 1993, 1994.
- ◆ Presenter: Soap and Detergent Conference, Mexico City, Mexico, 1991.
- ◆ Presenter: Wastewater Reuse Conference, Mazatlan, Mexico, 1992.

**President****PROFESSIONAL EXPERIENCE****WASTE WATER MANAGEMENT, INC., President****1994-PRESENT**

Falls Church, VA

Founded Waste Water Management, Inc. in 1994 for the provision of professional engineering services in the areas of water and wastewater pumping and treatment for industrial, private, and municipal clients. Consulting engineering in the areas of water supply, distribution and storage, wastewater collection, treatment and disposal, stormwater management, and land development. Detailed engineering design and drafting, bid analysis, and construction management for water and wastewater treatment plants and pump station projects. Industrial and municipal water and wastewater treatment process and operations evaluations. Preparation of operations and maintenance manuals. Contract operations for industrial water, wastewater and pretreatment plants, and municipal water and wastewater systems. Project financing and ownership for industrial water and wastewater treatment systems. Turn-key private and industrial water and wastewater project development. International project management consulting.

**ESPEY, HUSTON & ASSOCIATES, INC.****1992-1994****International Projects and Eastern Region Water and Wastewater Division Director**

Fincastle, Virginia

Involved in the planning and implementation of the International Services Division, which continued to build on the Mexican client base of services developed by Clean Water Engineers, Inc.. Responsible for the continued marketing of the Mexican industrial water and wastewater treatment market and for providing technical leadership for EH&A's Far East initiative.

Worked directly with the Ministry of Science, Technology, and Environment in Bangkok, Thailand as technical team leader for a large, multifaceted regional industrial wastewater project for the Asian Development Bank. Responsible for establishing and managing the Water and Wastewater Services Division in EH&A's Eastern Region, which served industrial and municipal clients in Virginia and the Carolinas.

**CLEAN WATER ENGINEERS, INC., President****1979-1992**

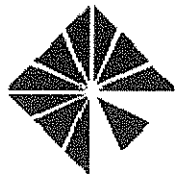
Williamsburg, Virginia

Founded Clean Water Engineers, Inc. and was involved in all aspects of the business, including engineering, business administration, marketing, and personnel management. Supervised a thirty person professional staff of engineers, drafters, surveyors, and administrative assistants. Expanded the firm from a local municipal service firm to a nationally recognized expert firm in the field of industrial wastewater treatment. Actively involved in plant operations, wastewater treatability studies, municipal financing, engineering planning, design, and construction supervision, as well as providing expert testimony. Operated a Virginia Class A Utility Construction Division, which constructed small sewer and pump station projects and provided sewer system Infiltration/Inflow maintenance and repair services. Expanded the company to the international level, successfully penetrating the Mexican industrial market, performing fifteen water and wastewater treatment projects in 1991—1992.

**DRAPER-ADEN ASSOCIATES, President****1975-1979**

Blacksburg, Virginia

Developed the water and wastewater engineering department and supervised numerous municipal and private water and wastewater utility projects, including water and sewer lines, pump stations, storage tanks, and treatment plants. Prepared and filed numerous federal and state grant and loan applications. Performed construction estimating, monitoring, engineering, report writing, and public presentations. Developed, budgeted and monitored municipal water and wastewater projects. Performed extensive marketing for new projects and clients. Supervised a small engineering staff and coordinated the activities of the engineering department with the surveying and drafting departments.

**President****GILBERT W. CLIFFORD & ASSOCIATES, Engineer**

1972-1974

Fredericksburg, Virginia

Planned and designed numerous public and private water and sewer utilities throughout Virginia. Designed water and sewer lines, pump stations, storage tanks, and treatment plants. Supervised and managed a staff of three design engineers and five drafters, and coordinated the activities of the production department with other departments.

**DESIGN AND CONSULTING EXPERIENCE**

---

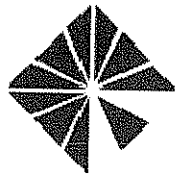
- ◆ Designed the first wastewater treatment plant project funded under Public Law 92-500 for the EPA Construction Grant program.
- ◆ First engineer in Virginia to use UV technology for disinfection of both drinking water and treated wastewater.
- ◆ Designed more than 100 industrial wastewater treatment plants.
- ◆ Designed more than 100 municipal wastewater treatment plants and evaluated more than 100 municipal wastewater treatment plants not designed.
- ◆ Designed more than 50 municipal and industrial water treatment plants.
- ◆ Designed more than 300 water, sewage and stormwater pumping stations.
- ◆ Past Corporate wastewater treatment and process consultant to Burlington Industries, Coca Cola, McCormick & Company, and Kimberly Clark de Mexico.
- ◆ Performed extensive construction management on state and federal grant and loan funded projects including projects funded by EPA, FmHA, and the COE.
- ◆ Designed the Roanoke City, Virginia wastewater plant upgrade from 24 - 60 MGD.
- ◆ Designed the 266 MGD Edmonston stormwater pump station in Prince George's County, MD in a record 90 days. The project was completed first quarter 2008.
- ◆ Developed the engineering program for the conversion of the City of Danville 24 MGD wastewater treatment plant from pure oxygen to single stage nitrification in 2007.
- ◆ Selected from 20 engineering firms as the Town Engineer for the Island of Chincoteague to develop its first public sewer system, 2006. Currently proposing to dispose of highly treated effluent through deep well injection utilizing an EPA issued permit.

**PROJECT HIGHLIGHTS**

---

- ◆ **Industrial Wastewater:** Led more than one- hundred industrial wastewater treatment projects in the United States and around the world, including more than twenty in the state of Virginia.
- ◆ **Domestic Wastewater:** Engineering design and evaluation of more than one hundred wastewater treatment plants throughout Virginia, Maryland, Delaware and the southeastern United States.
- ◆ **Hydraulic Systems and Pumping:** Directed more than three hundred major pumping system projects, including ground-up design and expansion projects in Virginia and the southeast.
- ◆ **Water System and Treatment Plants:** Designed more than eighty five water systems for municipalities, developments, schools and hospitals in Virginia, West Virginia and North Carolina.
- ◆ **Sewage Collection Systems:** Designed more than fifty community-wide sewer systems for municipal and private clients in Virginia, West Virginia and the Carolinas.
- ◆ **Expert Testimony:** Provided expert legal testimony in several significant legal cases in Virginia, Kentucky, South Carolina, Alabama and Indiana.





**President**

**PROFESSIONAL REGISTRATION**

---

Professional Engineer in the States of Virginia, West Virginia, Maryland, North Carolina, South Carolina, Tennessee, Kentucky, Wisconsin and Nevada  
Virginia Wastewater Works Operator - Class I  
Virginia Wastewater Works Operator - Class II

**TEACHING**

---

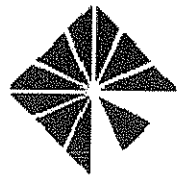
Mr. Rigby is an Adjunct Professor of Graduate Studies at the George Washington University in the Civil and Environmental Engineering Department (1996 – Present), an Assistant Instructor at George Mason University in the Volgenau School of Information Technology and Engineering (2005), and a Guest Lecturer at the University of Nebraska Department of Civil Engineering. The courses he teaches include:

- ◆ Wastewater Treatment Plant Design
- ◆ Advanced Sanitary Engineering Design
- ◆ Environmental Impact Assessment
- ◆ Environmental Chemistry
- ◆ Hazardous Waste Management
- ◆ Industrial Waste Management

**PROFESSIONAL AFFILIATIONS**

---

American Society of Civil Engineers, Member  
American Water Works Association, Life Member  
Botetourt County Building Code Board of Appeals, Past Member  
Botetourt Regional Health Department Advisory Committee, Past Member  
Chi Epsilon Civil Engineering Honor Society, Member  
"Clean Water Journal" (1989 to 1992), Editor  
"Meriwether Planned Community" (Fincastle, Virginia), Developer  
National Society of Professional Members, Past Member  
United States Coast Guard, E-6 Quartermaster, Honorable Discharge  
US Department of Health & Human Services (1985 to 1986), Discretionary Grant Officer  
US Small Business Association (1986), Delegate to Peoples Republic of China  
Virginia Water Project, Ford Foundation Loan Board, Past Member  
Water Environment Federation, Member

**Affiliated Consultant****PROFILE**

Mr. David Hanna is a registered professional engineer with 35 years of experience in the field of water and wastewater treatment, pump hydraulics, and project management. He is a USCG licensed marine engineer for both steam and diesel vessels of unlimited horsepower. Mr. Hanna has been involved in both the consulting engineering design field and the academic arena teaching first at the State University of New York, Department of Public Health, then at prestigious Rensselaer Polytechnic Institute.

Currently, Mr. Hanna is the chair of the Construction Technology and Management Department at Ferris State University. He is also an ASCE author and conducts seminars for wastewater plant processes and pump system hydraulics. Mr. Hanna has worked with several consulting firms including Calocerinos & Spina, Stearns & Wheeler, J.K. Fraser, Engineering Science and McClure Engineering. Throughout his career, Mr. Hanna has had many professional achievements and has written and published numerous technical papers.

**EDUCATION**

- ◆ Master of Science in Environmental Engineering, Rensselaer Polytechnic institute, Troy NY
- ◆ Bachelor of Science in Marine Engineering, US Merchant Marine Academy, Kingspoint NY

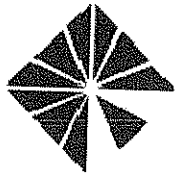
**AUTHOR AND PRESENTER**

Mr. Hanna has been an author and presenter of the following:

- ◆ "Pumping Station Design – Sludge Pumping Chapter", Butterworths Publishers, Boston MA, 1989.
- ◆ "Design Concerns In Upgrading Wastewater Treatment Plants", Iowa Water Pollution Control Association.
- ◆ "Design Considerations for Medium Sized Plants", New York Water Pollution Control Association.
- ◆ "Evaluation of Plant Hydraulics and Pumping Wastewater Treatment Plants, New York State Department of Environmental Conservation and Operator Training and Certification Program.
- ◆ "Advanced Treatment Cost Savings with Biological Nitrification and Denitrification", New York Water Pollution Control Association.
- ◆ "Evaluation of Plant Hydraulics and Pumping In Existing Wastewater Treatment Plants", New York State Department of Environmental Conservation Operator Training and Certification Program.
- ◆ "Practical Sludge Pumping", Iowa Water and Wastewater Short Course, Iowa Water Pollution Control Association.
- ◆ "Hydraulic Analysis and Upgrade Considerations for Water and Wastewater" seminars

**PROJECT EXPERIENCE**

- ◆ 2 MGD "cold climate" oxidation ditch WWTP at Sherill NY.
- ◆ Upgrade to the City of Youngstown OH, 30 MGD WWTP.
- ◆ 4.0 MGD WWTP.
- ◆ 8.0 MGD WWTP for the community of Fulton NY.
- ◆ 7.0 MGD WWTP for the City of Ottumwa IA.
- ◆ 0.0 MGD WWTP for the City of Binghamton NY.
- ◆ 9.0 MGD WWTP for the Seneca Knolls NY.
- ◆ 6.0 MGD WWTP for the City of Adel IA.



**Affiliated Consultant**

**DESIGN AND CONSULTING EXPERIENCE**

---

- ◆ Served as the hydraulic engineer advisor, analyzing the design flow in the discharge channel and openings in an existing box culvert for the Edmonston Stormwater Pump Station, in Edmonston, VA.
- ◆ Lead Engineer for the design and development of bid ready documents for the construction of a waste activated sludge pumping station for the Big Rapids wastewater treatment plant in Big Rapids, MI.
- ◆ Project Engineer for the evaluation and development of contract drawings for the retrofit for the Adel Sewage Pump Station in Idaho. The final set of bid documents developed for the project quadrupled the flow capacity of the pump station without significant structural changes.
- ◆ Project Evaluation Engineer for the field evaluation of a municipal pump station to fix a complicated cavitation problem. The problem at Sawmill Creek Pump Station in Sawmill Creek, NY was corrected and other upgrades were recommended.
- ◆ Project Evaluation Engineer for the Binghampton Pump Station evaluation. Responsible for the evaluation of seventeen existing sewage pump stations in order to determine the remaining useful service life and providing upgrade recommendations.

**PROFESSIONAL REGISTRATION**

---

- ◆ Professional Engineer in the State of Ohio

**TEACHING**

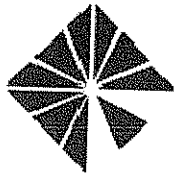
---

- ◆ Chairman, Department of Civil and Construction Engineering, Ferris State University, Big Rapids Michigan, 1991 – Present

**PROFESSIONAL AFFILIATIONS**

---

ASCE, ASME, ASHRAE



**Project Manager**

**PROFILE**

Mr. Michael Rossi is a Project Manager with over 13 years experience with water and wastewater projects throughout the Chesapeake Bay Watershed region. Since joining Waste Water Management, Inc. in 2005, Mr. Rossi has worked on a variety of public and private projects focusing on the design and construction of sanitary sewage pumping and force main systems, stormwater pumping stations, water treatment plants, and water distribution systems. Other work has included VPDES permitting, a wastewater treatment plant metals removal study, and user fee studies. Mr. Rossi is proficient with AutoCAD, Microstation, SketchUp, Haestad Methods WaterCAD, EPANET 2.0, EPA SWM 5.0, the Microsoft Office Suite, and VisualBasic.

**EDUCATION**

- ◆ Master of Science, Civil Engineering, The University of Iowa
- ◆ Bachelor of Science, Civil Engineering, University of Missouri

**PROJECT EXPERIENCE**

**EDMONSTON STORMWATER PUMP STATION, Project Manger**  
Edmonston, VA

Served as Project Manager responsible for design oversight, sub-consultant coordination, and day to day project management on a 266 MGD stormwater pump station. Pump station included three 10' diameter 350 hp Archimedes screw pumps, a 100' long x 11' wide concrete discharge channel, a mechanically cleaned bar screen system, a 1750 kw emergency generator, a new 3000 amp Pepco electrical service, and new WSSC water and sewer services.

**ROUTE 20 SEWER PROJECT, Project Manager**  
**International Projects and Eastern Region Water and Wastewater Division Director**  
Orange, Virginia

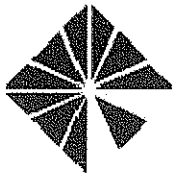
Served as Project Manager responsible for design oversight, sub-consultant coordination, and day to day project management on a suction lift pump station and associated 600 foot gravity sewer and 13,000 foot force main to serve a new manufacturing facility. Pump station includes an 80 kw generator and has provisions for future chemical feed odor control equipment. Project included hydraulic modeling of the force main. Project funding source was a Community Block Development Grant obtained by the Orange County Office of Economic Development.

**EDWARD L. KELLY LEADERSHIP CENTER SANITARY SEWAGE PUMP STATION**  
**Project Manager**

Prince William County, Virginia  
Served as Project Manager responsible for design oversight, sub-consultant coordination, and day to day project management on a duplex submersible pump station to serve a new school administration building. Pump station includes a precast concrete wetwell, control building (structure designed by others) with a valve/meter room and an electrical/control room. Pump station includes carbon adsorption air scrubbing odor control equipment. The pump station connects to an existing force main. Extensive hydraulic modeling was performed to determine the optimum setpoint speeds of the variable frequency drives at each pump station.

**RAPPAHANNOCK LANDING SANITARY SEWER PUMP STATION, Project Manager**  
Stafford, Virginia

Served as Project Manager responsible for design oversight, sub-consultant coordination, and day to day project management on a duplex submersible pump station to serve new development. Pump station includes a precast concrete wetwell, valve vault, and pig launch structures and chemical feed odor control equipment.



---

**Project Manager**

**BELMONT GLEN VILLAGE, Project Manager**

Loudoun, Virginia

Project Manager responsible for the day to day client management, subconsultant coordination, and oversight of the design of a wet well / dry well sanitary sewage pump station. The pump station was designed as part of the LCSA's Belmont Glen area facilities in order to serve a new development. The pump station includes chemical feed and air scrubbing odor control equipment, an overhead monorail crane, and a 42,000 gallon emergency storage tank.

---

**PROFESSIONAL REGISTRATION**

Professional Engineer in the State of Virginia

---

**PROFESSIONAL AFFILIATIONS**

American Society of Civil Engineers, Member