



May 14, 2020

Ms. Tara Lyle, Buyer
Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305

RECEIVED

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WV PURCHASING
DIVISION

Re: Response to CEOI 0603 ADJ2000000010
A&E Services for Camp Dawson Pierce Lake Dam Repair Design
AMT File: P20-0315

Dear Ms. Lyle:

A. Morton Thomas and Associates, Inc. (AMT) is pleased to submit one (1) original and one (1) copy of this expression of interest (EOI) to provide professional engineering and design services for construction documents to repair seepage concerns in the Pierce Lake Dam at Camp Dawson in Kingwood, West Virginia. The engineering design will include an evaluation and investigation of all dam related concerns by our highly qualified team, as well as a written maintenance plan for the dam that will be reviewed and coordinated with responsible parties.

AMT offers the West Virginia Army National Guard (WVARNG) our extensive dam related experience, focused on impounding structure regulations and requirements for earthen dams very similar to yours, throughout the Mid-Atlantic region. The AMT team provides full service capabilities, meaning that we have the expertise in each area of required technical competence for this project, having worked on a combined 300+ dams in recent years through our designated management team, with many of the same or similar concerns related to dam safety and stability to consider as the basis for design.

AMT is joined by **Triad Engineering, Inc.** to provide additional expertise and resources to this project in the areas of dam engineering, geotechnical engineering, construction engineering, surveying and mapping. Triad offers the specialized expertise required for the seepage and internal drainage concerns through a local, full-service geotechnical engineering team for the dam drilling, laboratory testing, and geotechnical engineering evaluations, as well as construction inspection and materials testing under the supervision of a lead construction engineer for this project with substantial experience locally. Triad also has previous experience with surveying and engineering projects at Camp Dawson and brings that knowledge for the coordination of access and security requirements and the availability of previous base mapping for utilities and infrastructure that may be useful in the vicinity of the dam.

AMT is also joined by **Bander Smith, LLC** to provide specialty services for a plan to investigate the principal spillway control structure, then to recommend any repairs and long-term maintenance needs for your dam's outlet works to remain fully functional in accordance with dam safety requirements, well into the future. Bander Smith will provide careful supervision of underwater inspections around the tower, by certified dive teams with an approved safety plan and extensive experience working around dam outlet works. They have no reportable incidents of safety violations on an estimated 200 dam evaluations since their company's inception in 2009.

AMT's Project Manager, **Don Rissmeyer, PE, CFM**, is a qualified and experienced professional engineer in West Virginia and six other states who leads the AMT dam safety team within our water resources division. He offers 30 years of progressive experience in managing the evaluation, design and construction of dam safety projects involving more than thirty-five (35) dams in recent years, some of which had very similar internal seepage and drainage concerns. Mr. Rissmeyer is recognized locally for his strong communication skills in explaining regulatory and technical challenges as well as maintenance requirements to dam owners, and for promoting dam safety as the highest priority with our clients. He offers a "hands on" approach to project management with attention to detail and will be directly involved in every aspect of this project by AMT staff and our subconsultants for the effective and seamless performance of our services to achieve a reliable repair plan that addresses all concerns, within the time and budget constraints required for this project.

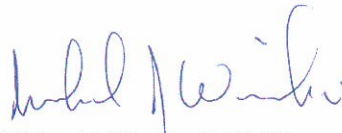
Through our engineering expertise, outstanding project management, and a strong commitment to your needs for this project, AMT offers the WVARNG a proven, successful and available team that can begin work immediately upon our selection. We look forward to the opportunity to work as an extension of your staff in evaluating dam safety concerns and addressing them on this project with an eye towards long-term maintenance of your dam and outlet works and appreciate your consideration of our qualifications.

Sincerely,

A. Morton Thomas and Associates, Inc.



Donald J. Rissmeyer, PE, CFM
Project Manager
drissmeyer@amtengineering.com



Michael J. Wiercinski, PE, PS
Principal-in-Charge
mwiercinski@amtengineering.com

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TODD LAKE DAM (UPPER NORTH RIVER #10) – AUGUSTA COUNTY, VA

Qualifications and Experience

TEAM INTRODUCTION

A. Morton Thomas and Associates, Inc. (AMT), an *Engineering News-Record* "Top 225 Design Firm" nationally, has been providing civil engineering and dam safety services focused on the Mid-Atlantic Region for 65 years. We are an employee-owned corporation with seven (7) Managing Principals employing approximately 500 engineers, environmental planners, surveyors, landscape architects, construction managers, construction inspectors and other support personnel. AMT has served and continues to serve federal, state and municipal agencies in our region through our twenty (20) offices, including our Parkersburg, West Virginia office for this project at Camp Dawson.

AMT is committed to growing our industry-leading reputation in the region by providing the best expertise in teaming with our clients, consultants, employees, and the surrounding communities we serve; to provide high quality, technically reliable and sustainable projects.

Our assigned AMT engineers offer proven experience involving more than forty (40) regulated dams in recent years, providing a wide range of services: dam inspections and evaluations, civil and structural engineering designs, hydrologic and hydraulic (H/H) modeling, environmental studies and permitting, surveying and mapping, public bidding, construction administration, and construction inspection services. We offer the full depth of technical expertise that is needed to meet the requirements of this contract and will utilize a locally based team for cost effective and common-sense approaches to your needs. Combining our diverse technical skills with successful design and construction experience, we offer strong project management, local expertise, and the provision of professional services based on prior project experience that will meet or exceed the West Virginia Army National Guard's expectations for this project.

Fairfax County DPWES

AMT's commitment to an innovative approach to the project, as well as, their outstanding staff on all levels, contributed greatly to delivering a successful [Royal Lake Dam] project. AMT took the time to provide strong leadership and project management throughout the course of the project phases. This, united with value of customer service and commitment to quality at every level, attributed to the success of the project.

— Don Demetrius, Former Chief
Watershed Projects Evaluation Branch

Virginia Department of Game & Inland Fisheries

There are many A&E firms I have managed and work with but very few do I consider a partner with the Department and my engineering and construction staff. AMT has become a good partner with open lines of communication, open dialogs on actions, solid engineering solutions and outstanding project management.

— Phil Lownes, VCCO, VDGIF
Former Director of Capital Programs

DAM PROJECT EXPERIENCE

As illustrated in the table below, which references the National Inventory of Dams (NID) for our representative projects, AMT has provided professional services related to dam safety in recent years on numerous public and private sector dams for our clients. They range in size from 13-feet to 139-feet tall and include all hazard classifications and a wide range of spillway types.

Dam Name	Dam Owner Name	Drainage Area	NID ID	Height (Ft.)	Length (Ft.)
Briery Creek Lake Dam	Virginia Department of Game and Inland Fisheries (VDGIF)	24.8	VA014737	64	920
Brunswick Dam	VDGIF	15.93	VA025001	25	620
Fluvanna Ruritan Dam	VDGIF	1.49	VA065002	43	790
Lower Powhatan Dam	VDGIF	6.0	VA145002	13	N/A
Upper Powhatan Dam	VDGIF	5.0	VA145001	25	380
Fawn Lake Dam	NTS Virginia Development Co.	4.14	VA177009	63	2400
Grant Lake Dam	Lake Wilderness POA	0.62	VA017711	29.4	600
Lee Lake Dam	Lake Wilderness POA	0.805	VA017710	19	450
Wilderness Lake Dam	Lake Wilderness POA	4.79	VA017707	28	650
Keaton's Run Dam	Lake of The Woods Association	1.17	VA137008	38	350
Veterans Memorial Dam	Lake of The Woods Association	7.2	VA137001	65.5	1475
Pohick Creek Dam #2 (Lake Barton)	Fairfax County DPWES	0.84	VA005923	39.1	698
Pohick Creek Dam #3 (Woodglen Lake)	Fairfax County DPWES	1.15	VA005928	38	700
Pohick Creek Dam #4 (Royal Lake)	Fairfax County DPWES	3.8	VA005922	42	1050
Pohick Creek Dam #7 (Lake Braddock)	Fairfax County DPWES	0.63	VA009005	47	720
Pohick Creek Dam #8 (Lake Huntsman)	Fairfax County DPWES	2.33	VA059007	45.4	700
South River Dam #8a (Jones Hollow)	City of Waynesboro	2.5	VA015208	25	380
Upper N. River Dam #77 (Hearthstone Lake)	Headwater Soil & Water Conservation District (SWCD)	8.0	VA015007	110	1300
Upper N. River Dam #10 (Todd Lake)	Headwaters SWCD	4.1	VA015005	68	734
Johns Creek Dam #2	Mountain Castles SWCD	6.2	VA045001	51.4	500
Brighton West Pond	City of Gaithersburg	3.06	MD00351	16	610
Wheaton Regional Park Dam	M-NCPPC Montgomery Parks	0.3	MD00041	24	733
Rocky Gorge Dam (T. Howard Duckett Reservoir)	Washington Suburban Sanitary Commission (WSSC)	132	MD00020	139	840
Montgomery College Dam #1	Montgomery College – Main Campus	0.13	MD00331	21	400
Montgomery College Dam #2	Montgomery College - Rockville Campus	0.20	MD00439	13.79	95
Upper Rock Creek #5 (Lake Needwood)	M-NCPPC-Upper Rock Creek	12.8	MD00046	65	426

SUBCONSULTANTS

Triad Engineering, Inc. (Triad) is an engineering consulting firm with seven (7) office locations throughout West Virginia, Virginia, Pennsylvania, Ohio and Maryland providing services in dam engineering, geotechnical engineering, surveying, construction inspection and testing, environmental assessments, laboratory testing, and related earth-science disciplines for this project.



The firm has provided services on thousands of projects of varying size and complexity since beginning operations in 1975, including projects at Camp Dawson, and offers extensive experience in dam safety and impoundment designs for numerous federal, state and local governmental agencies. This includes projects involving more than seventy (70) dams throughout West Virginia and Virginia, as listed below.

Camp Dawson Projects

- Multi-Purpose Building Survey
- Shooting Range Survey
- Building Stakeout Survey
- Building 12H30 Geotechnical Engineering
- Landslide Repair Drilling
- Hydrant Fuel Project QA/QC and Survey
- Pistol Course Modifications QA/QC
- Asphalt Paving QA/QC
- Proof Roll QA/QC

West Virginia Dams

- Deegan Dam - Bridgeport, Harrison County
- Mt. Storm Lake Dam - Mt. Storm, Grant County
- Mountain Top PSD Dam - Mt. Storm, Grant County
- Bailey Dam - Mingo County
- Hinkle Dam - Bridgeport, Harrison County
- Longview Power Plant - Monongalia County
- Markwood Cedar Lake Dam - Mineral County
- Alpine Lake Dam - Terra Alta, Preston County
- Cobun Creek Dam - Morgantown, Monongalia County
- Willow Island Locks and Dam - Pleasants County
- Silver Creek Dam - Snowshoe, Pocahontas County
- Shavers Dam - Snowshoe, Pocahontas County
- Duncan Run Estates Dam - Berkeley County
- Lake Forest Estates Dam - Jefferson County
- Lake Ferndale Dam - Hampshire County
- U.S. Silica Dam - Berkeley Springs, Berkeley County
- Bruceton Mills Dam - Bruceton Mills, Preston County
- Loveridge Dam - Marion County
- Consolidation Coal Company Dams, Marion County
- Castleman Run Dam - Brooke County
- Bee Run Dam - Clay & Roane Counties
- Boley Dam - Babcock State Park, Fayette County
- Wilson Big Hollow Dam - Hampshire County
- Warden Dam - Hardy County
- Union Carbide Holtz Impoundment - Kanawha County
- Union Carbide Ward Pond - Kanawha County

- McClintock Dam - Mason County
- Burches Run Dam - Marshall County
- Anawalt Dam - McDowell County
- Pinnacle Rock Lake Dam - Mercer County
- Lemley Dam - Monongalia County
- Hurricane Water Supply Dam - Putnam County
- Mary Beth Dam - Putnam County
- Glade Springs Dam - Raleigh County
- Little Beaver Dam - Raleigh County
- PPG Earthen Dam - Wetzel County
- Shannondale Dam - Jefferson County
- Sleepy Hollow Dam - Berkeley County
- Coolfont (Lake Siri) Dam - Morgan County
- City of Thomas Reservoir - Thomas, Tucker County
- Lakewood Dam - Mineral County
- Blacksville No. 1 Fine Refuse Impoundment - Monongalia County
- Blacksville No. 2 Fine Refuse Impoundment - Monongalia County
- Tibbs Run - Monongalia County
- Neeley Hollow AMD - Mannington, Marion County
- Lowe AMD - Mannington, Marion County
- Snowshoe Resort Snowmaking Dam - Marlinton, Pocahontas County

Virginia Dams

- Apple Mountain Lake Dams - Warren County
- Blue Mountain Deer Lake Dam - Warren County
- Cove Dams - Frederick County
- Coventry Dam - Stafford County
- Deep Run Farm - Culpeper County
- Hideaway Hills Dam - Fauquier County
- JMU (Newman) Dam - Rockingham County
- Lake Front Royal - Warren County
- Lake Isaac Dam - Frederick County
- Lake of the Clouds - Warren County
- Lake Serene - Frederick County
- Lake St. Clair - Frederick County

Bander Smith, LLC (Bander Smith) is an engineering firm that has provided specialty services related to dam inspections, evaluations, repair plans, and repair work for more than 200 dams since 2009. They carry unique General Liability Insurance that specifically includes dam/marine construction & inspection projects of this type.



With a focus on safety, Bander Smith offers a highly trained team including commercial divers and confined space experts who perform underwater inspections on dam components including valves, riser structures, spillways and similar outlet works in the region. To date, they offer a perfect safety record, with zero reportable incidents since inception and have a 100% project completion history for inspection and repair services, with change orders on less than 1% of projects. Bander Smith knows exactly what is required for the evaluation and report of your outlet works and has provided the same or similar services on a large number of dams throughout the region, some of which are listed below.

Virginia Department of Game and Inland Fisheries

- Airfield Pond Dam - Sussex County
- Lake Albemarle Dam - Albemarle County
- Lake Amelia Dam - Amelia County
- Bark Camp Lake Dam - Scott County
- Bass Pond Dam - Powhatan County
- Briery Creek Lake Dam - Prince Edward County
- Lake Brittle Dam - Fauquier County
- Brunswick Lake Dam - Brunswick County
- Burke Lake Dam - Fairfax County
- Lake Burton Dam - Pittsylvania County
- Chandler's Mill Pond Dam - Westmoreland County
- Clyde's Pond Dam - Mecklenburg County
- Lake Conner Dam - Halifax County
- Lake Curtis Dam - Stafford County
- Fluvanna-Ruritan Lake Dam - Fluvanna County
- Lake Frederick Dam - Frederick County
- Gardy's Mill Pond Dam - Northumberland County
- Lake Gordon Dam - Mecklenburg County
- Hidden Valley Lake Dam - Washington County
- Horsepen Lake Dam - Buckingham County
- Hundley's Pond Dam - Mecklenburg County
- Ice House Pond Dam - King & Queen County
- Lake Keokee Dam - Lee County
- Laurel Bed Dam - Russell County
- Lower Powhatan - Lake Powhatan County
- Lake Nelson Dam - Nelson County
- Nottoway Lake Dam - Nottoway County

- Lake Orange Dam - Orange County
- Lake Robertson Dam - Rockbridge County
- Rural Retreat Dam - Wythe County
- Saunders Pond Dam - Amelia County
- Lake Shenandoah Dam - Rockingham County
- Spring Branch Pond Dam - King & Queen County
- Sunfish Pond Dam - Powhatan County
- Lake Thompson Dam - Fauquier County
- Upper Powhatan Lake Dam - Powhatan County
- Walker Coleman Pond Dam - King & Queen County
- Waterfowl Impoundment - Fauquier County

Rivanna Water & Sewer Authority

- South Fork Rivanna Dam
- Sugar Hollow Dam
- Ragged Mountain Dam
- Beaver Creek Dam
- Totier Creek Dam
- Lickinghole Creek Dam
- North Fork and Mechums River Lowhead Dams

Other Dams

- Prince Edward State Park Low Level Drain Inspection & Repairs
- Lake Jackson Tainter Gate Inspection & Repairs
- Lake Wilderness Dams
- Lake of the Woods Dams

STAFFING PLAN

STAFFING PLAN

The AMT team will provide 100% of the required services for this contract, including any additional requirements that may arise during our dam evaluation. We propose the following team to the WVARNG for this project.

STAFF QUALIFICATIONS

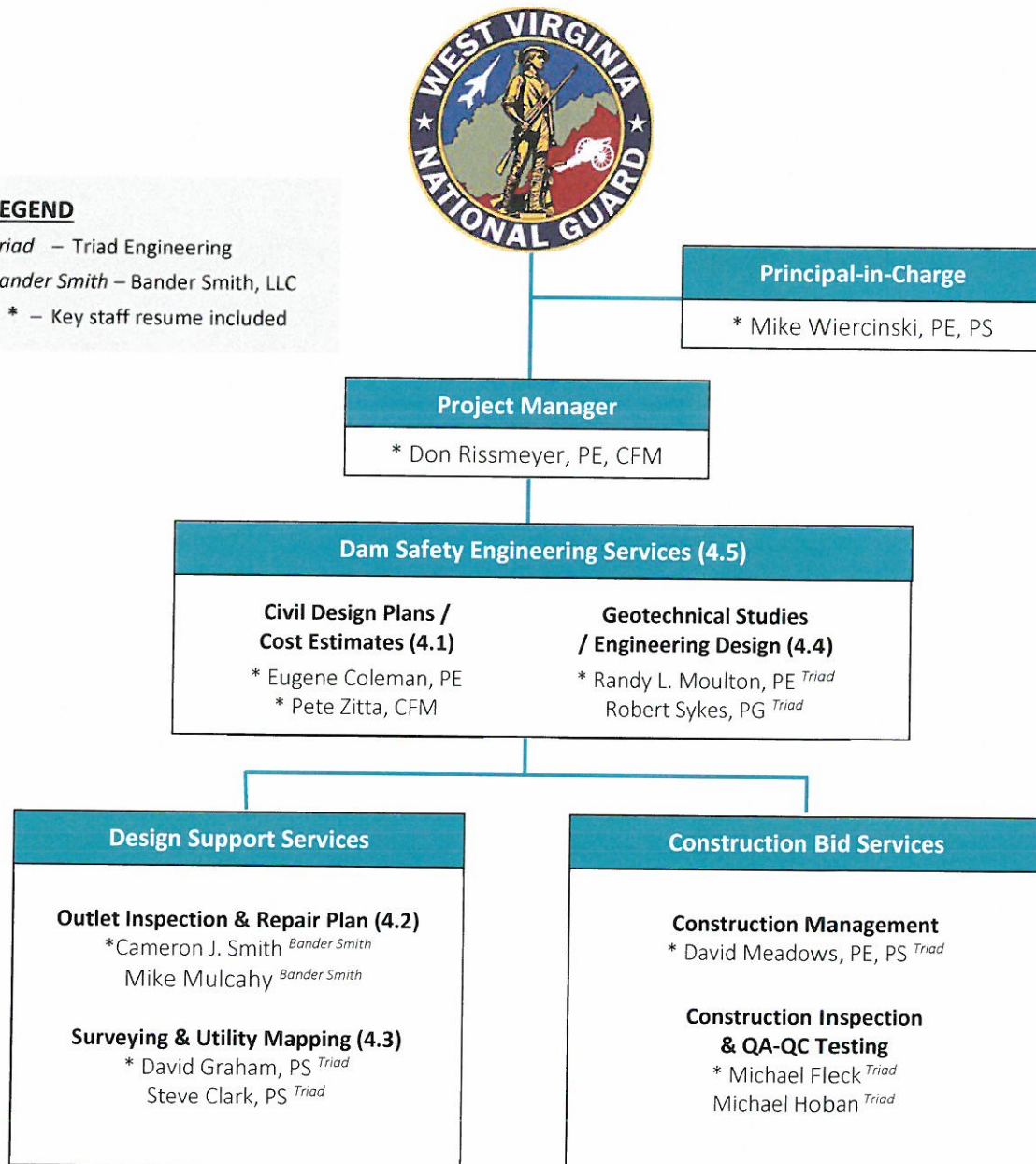
Resumes for key staff assigned to this project are provided on the following pages in this section of our Expression of Interest for your consideration. This same team will be maintained without substitution for the WVARNG.

LEGEND

Triad – Triad Engineering

Bander Smith – Bander Smith, LLC

* – Key staff resume included





Don Rissmeyer, PE, CFM

PROJECT MANAGER • AMT

Mr. Rissmeyer has 30 years of progressive experience with dam safety engineering projects, including dam inspections and evaluations, as-built surveys, dam repair plans, dam upgrades and rehabilitation plans, hydrologic and hydraulic modeling, environmental permitting, cost estimates, maintenance plans, public bidding and the construction of dam safety projects. Projects include low, significant, and high hazard dams for public and private clients. Mr. Rissmeyer frequently coordinates dam safety projects with state and federal agencies including the Natural Resources Conservation Service and various Soil and Water Conservation Districts.

ROLE/RESPONSIBILITY

Project Manager

EDUCATION

BS, 1990, Civil Engineering,
University of Virginia

REGISTRATIONS

Professional Engineer:
West Virginia [REDACTED]

Certified Floodplain
Manager, CFM
No. [REDACTED] (ASFPM)

YEARS OF EXPERIENCE

Total: 30
With AMT: 14

REPRESENTATIVE PROJECTS

Statewide Dam Safety Services Term Contract – Virginia Department of Game and Inland Fisheries (VDGIF), Statewide, VA: Project Manager for providing statewide dam safety services and support to the VDGIF on their 40+ regulated dams for the past 8 years. Services have included engineering studies and dam rehabilitation designs at the Briery Creek Dam, Brunswick Lake Dam, Fluvanna Ruritan Lake Dam, and the Upper and Lower Powhatan Lake Dams. Current assignments include assessment and repair of recent storm damages at the VDGIF Fish Hatchery Dams in King and Queen County and seepage concerns at Fluvanna Ruritan Lake Dam.

Statewide Dam Safety Services Term Contract –Soil and Water Conservation Districts (SWCD Dams), Statewide, VA: Project Manager for providing statewide dam safety services and support to ten (10) Soil and Water Conservation Districts with 80+ dams, for a backlog of small dam repair needs. Current task orders include a study to relocate or armor an access road for Johns Creek Dam #2 (Mountain Castles SWCD) and addressing erosion and internal drainage issues with wave berm reconstruction and low flow drain repairs on seven (7) dams within the Buffalo Creek and Bush Creek Watersheds (Piedmont SWCD).

Pohick Creek Watershed Dam Rehabilitation Projects, Fairfax County, VA: Engineer of Record for the Woodglenn Lake and Royal Lake dam rehabilitation projects for Fairfax County DPWES, which involved renovating, armoring and enlarging the grass spillways for the spillway design flood (SDF) and addressing related maintenance concerns in the design, including internal drainage issues related to groundwater. Mr. Rissmeyer also assisted with bid and construction phase services, working with Angler and EQR construction, and helped manage flood inundation studies for other Pohick Watershed Dams including Mercer, Huntsman and Barton.

Upper North River Dam No. 10 (Todd Lake), Augusta County, VA: Construction Project Manager for this dam rehabilitation, Mr. Rissmeyer worked as an extension of the Augusta County and Headwaters SWCD staff, and to support the NRCS construction management position. Permits were obtained from State Dam Safety, the U.S. Forest Service, and the Corps of Engineers (Nationwide Permit 3). Bids were under budget (\$3.0M versus \$3.6M estimate) and construction work by Howdyshell Excavating was completed, with low change orders.

Lake of the Woods Association (LOWA Dams), Orange County, VA: Project Manager for dam safety over 15 years. Services have included PE dam inspections, as-built surveys, dam rehabilitation plans including replacing sluice gates, environmental permitting, bidding and construction phase services, as well as operation and maintenance plans, emergency action plans, and table-top exercises for emergency preparedness.

Lake Wilderness Property Owners Association (LWPOA Dams), Spotsylvania County, VA: Project Manager for dam safety services including PE dam inspections and a dam rehabilitation plan for Grant Lake to address maintenance concerns and convey the spillway design flood (SDF). Services included dam as-built surveys, engineering design plans, environmental permitting, bidding and construction phase services, as well as operation and maintenance plans, emergency action plans, and a table-top exercise for emergency preparedness.



Mike Wiercinski, PE, PS

PRINCIPAL-IN-CHARGE • AMT

Mr. Wiercinski has 44 years of experience in all aspects of civil and water resources engineering for AMT projects including dam inspections, dam evaluations and improvement plans, hydrologic and hydraulic studies, engineering design and construction documents, cost estimates, bid and construction phase services. He provides overall supervision and quality assurance for our clients, working with Project Managers, Technical Leads and Subconsultants in their areas of technical expertise, and assigning Quality Assurance reviews for each submission in accordance with our project-specific QA-QC plans for our designs.

ROLE/RESPONSIBILITY

Principal-in-Charge /
Quality Assurance

EDUCATION

BS, 1975, Civil Engineering,
West Virginia University

REGISTRATIONS

Professional Engineer:
West Virginia [REDACTED]

Professional Surveyor:
West Virginia [REDACTED]

YEARS OF EXPERIENCE

Total: 44
With AMT: 34

REPRESENTATIVE PROJECTS

Statewide Dam Safety Services Term Contract – Virginia Department of Game and Inland Fisheries (VDGIF), Statewide, VA: Principal-in-Charge for providing statewide dam safety services and support. Services have included engineering studies and dam rehabilitation designs at the Briery Creek Dam, Brunswick Lake Dam, Fluvanna Ruritan Lake Dam, and the Upper and Lower Powhatan Lake Dams. Current assignments include assessment and repair of recent storm damages at the VDGIF Fish Hatchery Dams (King and Queen County).

Statewide Dam Safety Services Term Contract –Soil and Water Conservation Districts (SWCD Dams), Statewide, VA: Principal-in-Charge for providing statewide dam safety services and support to ten (10) Soil and Water Conservation Districts. Current task orders are for Johns Creek Dam #2 (Mountain Castles SWCD) and seven (7) dams within the Buffalo Creek and Bush Creek Watersheds (Piedmont SWCD).

Pohick Creek Watershed Dam Rehabilitation Projects, Fairfax County, VA: Principal-in-Charge for the Woodglen Lake and Royal Lake dam rehabilitation projects for Fairfax County DPWES through a civil and ancillary services contract, involving dam evaluation, surveying, engineering design, cost estimates, environmental permitting, bid and construction phase services.

Upper North River Dam No. 10 (Todd Lake), Augusta County, VA: Principal-in-Charge for providing bid and construction phase services working closely with Augusta County, Headwaters SWCD, and the NRCS state engineer to permit and build dam safety improvements.

Lake of the Woods Association (LOWA Dams), Orange County, VA: Principal-in-Charge for dam safety over 15 years. Services have included PE dam inspections, as-built surveys, dam rehabilitation plans including replacing sluice gates, environmental permitting, bidding and construction phase services, as well as operation and maintenance plans, emergency action plans, and table-top exercises for emergency preparedness.

Lake Wilderness Property Owners Association (LWPOA Dams), Spotsylvania County, VA: Principal-in-Charge for dam safety services including PE dam inspections and a dam rehabilitation plan for Grant Lake to address maintenance concerns and convey the spillway design flood (SDF). Services included dam as-built surveys, engineering design plans, environmental permitting, bidding and construction phase services, as well as operation and maintenance plans, emergency action plans, and a table-top exercise for emergency preparedness.

Military Motor Pool at Huntington Tri-State Armed Forces Reserve Center, Kenova, WV: Principal-in-Charge for AMT's design of a new military motor pool, including reconstruction of the access road to the parking area, along with grading and creation of a parking area to accommodate heavy military equipment. The project included lighting, drainage, and environmental permitting. PCASE was used for the design of the new pavement as well as the stone thickness for the motor pool area.



ROLE/RESPONSIBILITY

Geotechnical Engineering
Studies and Design Plans

EDUCATION

MS, 1980, Civil Engineering
(Geotechnical), West Virginia
University

BS, 1976, Civil Engineering,
West Virginia University

REGISTRATIONS

Professional Engineer:
WV [REDACTED]

YEARS OF EXPERIENCE

Total: 42
With Triad: 42

Randy L. Moulton, PE

GEOTECHNICAL ENGINEER • TRIAD ENGINEERING

Mr. Moulton is a Principal Engineer for Triad Engineering, Inc., and in this capacity, he is responsible for contract administration, risk management and overall quality control and technical quality assurance of projects undertaken by the company. Specific technical activities include preparation of geotechnical studies, subsurface exploration programs with boring logs, evaluation of geotechnical data and lab results, and the review and preparation of detailed geotechnical engineering reports and design recommendations. Mr. Moulton's 42 years of experience has resulted in technical specialties which include design of deep foundations, in particular rock-socketed caissons, design of various types of retaining walls, evaluation of groundwater and seepage problems, and the design of earthen and earth-rock dams in West Virginia and surrounding states.

REPRESENTATIVE PROJECTS

Ferndale Lake Dam, Hampshire County, WV: Project Engineer for a geotechnical study of recent seepage concerns, leading to the failure of the principal spillway concrete discharge apron and seepage problems along the principal spillway conduit. The evaluation and design of these dam repairs led to Triad providing additional QC services during construction.

Cobun Creek Dam, Morgantown, WV: Project Engineer for the Cobun Creek Dam which impounds approximately 185 acre-feet of water and was originally constructed in 1957 as a water supply dam for the City of Morgantown. The earth / rock fill structure is approximately 57 feet in height and 268 feet long. The open-channel emergency spillway is constructed on the right abutment, with the channel excavated into bedrock. Filling of the undercut area with concrete was proposed, with reinforcement dowelled into the upper and lower rock units. Triad provided construction plans and specifications, as well as safety inspections for the Certificate of Approval forms to satisfy WV DEP dam safety regulations.

Lake Forest Estates Dam, Jefferson County, WV: Project Engineer for evaluation of an existing earthen dam located on property being developed as a residential subdivision. The WV DEP issued an order to evaluate the structure and bring it into compliance with current dam safety standards by incorporation a new principal/auxiliary spillway and internal drainage blanket to enhance stability. The approximate 30-foot high dam was about 350 feet long, with no principal spillway or pond drain. Triad conducted field explorations, laboratory testing, engineering evaluations, and a design-development report, followed by engineering design plans, specifications, and permitting for the dam rehabilitation plan.

Silver Lake Dam, Frederick County, VA Prime designer and project engineer for a privately owned 40-foot high earth dam which was replacing an older, unsafe structure. Features of design included a principal spillway system with an oversized riser to control the pool level more effectively and an emergency spillway routed through a box culvert and discharging via a grouted riprap channel. Triad handled all permitting activities with state agencies and the U.S. Army Corps of Engineers. Triad also prepared complete bidding and contract documents and conducted construction monitoring and testing services.

Double Wood Farm Pond, Clarke County, VA Construction of a dam for a 30-acre lake situated. Parcel contained flat to steeply sloping grass and forested terrain with major sandstone rock outcrops throughout the planned embankment area. An existing stream flowed through the planned pond footprint, but well were also required at the site to help recharge the pond. Triad completed field explorations, lab testing and geotechnical analysis and design for a new dam and lake



Eugene Coleman, PE, LEED GA

CIVIL ENGINEER • AMT

Mr. Coleman has 27 years of civil engineering experience with a wide array of design and construction projects. His experience includes municipal facilities, dam rehabilitation plans, drainage and utility systems, and management design, as well as commercial, governmental and industrial site development projects. Most of these projects entail surveying, engineering design plans, environmental permitting, construction cost estimating, and the development of contract documents and specifications for public bidding. Mr. Coleman has led engineering designs for several dam rehabilitation plans and can also provide bid and construction phase services.

ROLE/RESPONSIBILITY

Civil Design Plans /
Cost Estimates

EDUCATION

BS, 1993, Civil Engineering,
Virginia Polytechnic Institute
and State University

REGISTRATIONS

Professional Engineer:
VA, TN, and NC

DEQ Stormwater Management
Combined Administrator

YEARS OF EXPERIENCE

Total: 27
With AMT: 7

REPRESENTATIVE PROJECTS

Upper and Lower Powhatan Lake Dams (VDGIF), Powhatan County, VA: Lead Design Engineer involved in the preparation of a preliminary engineering report with recommendations to increase spillway capacity and rehabilitate these state-owned dams, followed by the surveying, environmental permitting and civil engineering design for a dam rehabilitation plan at the DGIF wildlife management area. Construction was recently completed by Keith Barber Construction with low change orders and no extensions of time.

Fluvanna Ruritan Lake Dam (VDGIF), Fluvanna County, VA: Lead Design Engineer for the coordination of the surveying, environmental permitting, and civil engineering design to increase spillway capacity and rehabilitation the outlet works based on an underway inspection by Bander Smith. The engineering design will address seepage and slope stability concerns in the earthen structure by buttressing the back slope of the dam with earth-fill, a blanket drain, and a graded filter drain with observation manhole. Erodibility concerns in the grassed spillway will be addressed by the design of a concrete chute spillway to pass the spillway design flood.

Fish Hatchery Dams, King and Queen County (VDGIF), VA: Lead Design Engineer for the evaluation and repair of recent erosion damage at two dams for VDGIF, including the coordination of surveying, environmental permitting, and civil engineering design plans and cost estimates. The engineering design includes slope stabilization and armoring, adding stilling basins to the concrete spillways, repairing a sloughed shoreline, and diverting surface water runoff away from the areas of erosion in our design.

Statewide Dam Safety Services Term Contract – SWCD Dams, Statewide, VA: Lead Design Engineer for statewide dam safety services and support to ten (10) Soil and Water Conservation Districts with 80+ dams. The first task order includes pre-design services for surveying, geotechnical engineering and environmental studies involving Waters of the United States for seven (7) dams in the Buffalo Creek and Bush Creek Watersheds for the Piedmont SWCD. A second task order for the civil design plans and environmental permitting is planned, to include repairing wave berms, evaluating and repairing low flow drains, addressing groundwater issues, a graded filter drain, and access road work.

Holston Army Ammunition Plant, Kingsport, TN: This army ammunition plant is operated by BAE Systems, and Mr. Coleman has provided general civil engineering and design services for small projects during his career. Coordination of base security and access requirements involving surveying, civil engineering and environmental services on the plant facilities were required for each engineering design.

Second Creek Dam Removal, Knoxville, TN: Lead Engineer for the removal of a concrete dam and approximately 75-feet of stream restoration on Second Creek. In addition to the design of the project, bid phase services including bid documents, specifications, and a pre-bid meeting were provided. Permitting included coordination with the Tennessee Department of Environment and Conservation and the U.S. Army Corps. of Engineers.



Pete Zitta, CFM

HYDROLOGIC AND HYDRAULIC MODELING • AMT

Mr. Zitta has 22 years of progressive experience in water resources engineering including earthen dams and spillways. Services include watershed studies, engineering evaluations, dam breach analysis and hazard classification, flood and breach modeling, flood inundation mapping, and other hydrologic and hydraulic analysis. His projects have included field inspection of regulated dams; completion of dam inspection, and the engineering design of dam rehabilitation plans and remediation measures to address deficiencies and bring existing facilities into compliance with state and federal regulations.

ROLE/RESPONSIBILITY

Dam Studies/ Hydrologic and Hydraulic Modeling

EDUCATION

BS, 1999, Civil Engineering,
University of Maryland

BA, 1995, Philosophy,
University of Maryland

REGISTRATIONS

Certified Floodplain
Manager, CFM
No. [REDACTED] (ASFPMP)

YEARS OF EXPERIENCE

Total: 22
With AMT: 20

REPRESENTATIVE PROJECTS

Woodglen Lake Dam, Fairfax County, VA: Lead hydraulic modeler for the Sunny Day Dam Breach Analysis and H&H modeling for the enlarged spillway as part of the Woodglen Lake dam rehabilitation study and design teams. Calculated Dam Breach Q maximum using NRCS TR-60 methods; inundation areas were determined using a combination of field survey and LIDAR data to cut stream channel cross sections in HEC-GeoRAS to be imported into the HEC-RAS model for analysis; computed results were then entered back through HEC-GeoRAS into ArcGIS for preparing the flood inundation maps.

Royal Lake Dam, Fairfax County, VA: Lead hydraulic modeler for the Sunny Day Dam Breach Analysis and H&H modeling for the enlarged spillway as part of the dam rehabilitation study and design teams. Calculated Dam Breach Q maximum using NRCS TR-60 methods; inundation areas were determined using a combination of field survey and LIDAR data to cut stream channel cross sections in HEC-GeoRAS to be imported into the HEC-RAS model for analysis; computed results were then entered back through HEC-GeoRAS into ArcGIS for preparing the flood inundation maps.

Lake Barton Dam, Fairfax County, VA: Lead hydraulic modeler for the Sunny Day Dam Breach Analysis, floodplain analysis, and H&H modeling for the Lake Barton Dam. Conducted preliminary field investigations, calculated Dam Breach Q maximum using NRCS TR-60 methods; inundation areas were then determined using a combination of field surveying and LIDAR data which was used to cut stream channel cross sections in HEC-GeoRAS to be imported into the HEC-RAS model for analysis; computed results were then entered back through HEC-GeoRAS into ArcGIS for preparing the flood inundation maps.

Lake Mercer Dam, Fairfax County, VA: Lead hydraulic modeler for hydrology and hydraulics to delineate the flood inundation mapping for Lake Mercer to the terminus of Pohick Creek at Pohick Bay (6 miles in length). Conducted preliminary site evaluations and coordinated surveying of road crossings to merge with HEC-GeoRAS modeling of County provided LIDAR and aerial image data for cross section lines to import into HEC-RAS for hydraulic analysis. Computed results were entered back through HEC-GeoRAS into ArcGIS for the flood maps

Ellicott City Dam, Howard County, MD: Performed facility and embankment inspections and Hydrologic and Hydraulic (H&H) analysis in order to bring the dam to current MDE Dam Safety Division standards. H&H analysis included evaluating functionality of the facility in pre-existing (as designed), existing (as surveyed) and proposed conditions. H&H peak storm events included 100-year storms and Probable Maximum Flood (PMF) events with a HEC-RAS Dam Breach Analyses performed and Dam Hazard Classification; and flood inundation mapping. Watershed hydrology was established using ArcGIS and TR-20.

WSSC Rocky Gorge Dam, Laurel, MD: Lead Hydraulic modeler to assess WSSC spillway operations and inundation areas for the Patuxent River below this dam. Releases at the T. Howard Duckett Reservoir (Rocky Gorge Dam) and the Triadelphia Reservoir (Brighton Dam) were evaluated. Modeling included GISHydro for land use, soils data and Curve Number (CN) generation, sub-watershed delineations, Times-of-Concentration and other inputs to HEC-1 for the 367-square mile watershed model; HEC-RAS was then used to model of the inundation zone for a 20-mile section of the Patuxent River, including existing bridges and major road crossings which required some field survey verification and use of record drawings.



David Graham, PS

SURVEY SUPERVISOR • TRIAD ENGINEERING

Mr. Graham brings over 43 years of diverse surveying and construction management experience to the Triad team. He is responsible for all survey services provided in our northwest region. Mr. Graham has provided survey services to municipalities, residential, commercial and industrial developments and construction groups. His background includes experience as a Professional Surveyor, Field Engineer, Consultant, Construction Supervision, and Project Management.

ROLE/RESPONSIBILITY

Surveying & Utility Mapping

EDUCATION

Woodson School of
Surveying

REGISTRATIONS

Professional Surveyor: WV
[REDACTED]

YEARS OF EXPERIENCE

Total: 43

REPRESENTATIVE PROJECTS

Camp Dawson 3498G-12H30 Building, Kingwood, WV: As Survey Manager, Mr. Graham was responsible for overseeing the construction stakeout of the 160 feet by 50 feet metal building system with a finished floor elevation of 1,000.85 feet vertical. Services provided included stakeout for site grading, staking building column lines, layout of anchor bolts and other requirements for the construction work.

Lake Lynn Generation Plan, Monongalia County, WV: As Survey Manager, Mr. Graham provided oversight for a property line survey to stake and mark the property line of the Lake Lynn Generation Plant along the Northeast and Southeast border of Cheat Lake.

Wolf Run Mining Company, Philippi, WV: Mr. Graham supervised his team in providing baseline control points above and mid-slope for the purpose of detecting any movement of a potential slide area. At the completion of establishing control, slip monitoring procedures were created which included monitoring the site at specified intervals, providing photographic and video documentation, maintaining a chronological history of the area, and providing updated reports.

Reservoir Pumped Storage Project, Bath County, VA: Mr. Graham was surveyor on the Bath County Pumped Storage Project which consisted of two earthen dams, with an upper reservoir and lower lake. The project had several miles of power conduits (concrete / steel lined tunnels) and 3 – 1,000 'vertical shafts. The power plant was a 6-unit hydro-electric pumped storage plant.

Lake Amistad Hydro-Electric Power Plant, Del Rio, TX: Mr. Graham was the surveyor in charge for the Lake Amistad Hydro-Electric Power plant which is a two-unit power plant constructed at the base of the existing Amistad Dam and in the Rio Grande River. The overall project was supervised by the Army Corps of Engineers.

Longwall Mining Subsidence Monitoring, Marshall County, WV: As Manager, Mr. Graham directed installation of strain gauges, field surveys, and daily monitoring services to assist in the monitoring of a transmission pipeline. Upon completion of initial baseline and consequent daily follow-up surveys, a report of data subsidence / consistency was completed and submitted.

Mt. Storm Power Station, Mt. Storm, WV: Mr. Graham provided oversight for survey stakeout services to assist in the renovations at this power station. Services included initial and certified as-built surveys as well as for stakeout of office calculations and site control.

Bridge and Road Projects, WV: Mr. Graham has managed all phases of surveying and mapping services for highway bridges throughout West Virginia working with the WVDOH and the U.S. Fish and Wildlife Services in their jurisdictions. Bridge and roadway projects have consisted of single span, multi-span, and pedestrian walking bridges. Highway rights of ways were determined at project sites, and engineering designs were utilized for field staked boundaries, as well as stakeout for roadway and bridge construction work.



David Meadows, PE, PS

CHIEF TECHNICAL OFFICER • TRIAD ENGINEERING

Mr. Meadows brings over 40 years of industry leadership, design, construction and project management experience to Triad Engineering. Mr. Meadows joined Triad in 2013 to provide management and supervision to the southwest region, which includes West Virginia and Ohio. Mr. Meadows has also been named Triad's Chief Technical Officer for overall technical expertise, quality control and assurance, risk management, operations management, leadership and business development.

ROLE/RESPONSIBILITY

Construction Management

EDUCATION

MS, 1981, Civil Engineering
(Geotechnical), Virginia
Polytechnic Institute and
State University

MS, 1987, Civil Engineering,
West Virginia College of
Graduate Studies

BS, 1974, Civil Engineering,
West Virginia Institute of
Technology

REGISTRATIONS

Registered Professional
Engineer: WV [REDACTED]

Registered Professional
Surveyor: WV [REDACTED]

YEARS OF EXPERIENCE

Total: 40

Prior to coming to Triad, Mr. Meadows served in a number of technical and leadership positions at the US Army Corps of Engineers, Huntington District. His expertise includes civil works planning, engineering design, geotechnical engineering, construction management, surveying, environmental permitting and water resources engineering including design and construction management of governmental projects.

REPRESENTATIVE PROJECTS

Triad Engineering, Scott Depot, WV: Mr. Meadows has played an important role in maintaining the technical quality and management of the region, while being very active in business development. Besides managing all phases of operations for the Scott Depot, WV and Athens, OH offices, Mr. Meadows is responsible for management and planning of all civil engineering design projects; environmental assessments; surveying and mapping; water/wastewater engineering designs; construction monitoring and testing operations; geotechnical investigation projects; and soils and concrete laboratory work in the region.

Chief H&H and Technical Support Division, Great Lakes and Ohio River Dam Safety Production Center and Dam Safety Modification Mandatory Center of Expertise, US Army Corps of Engineers, Huntington, WV: Previously responsible for developing and directing the Division's efforts to manage the regional execution of complex, non-routine, regional and inter-regional dam safety modifications, engineering assessments and risk and reliability analyses throughout the infrastructure capital stock portfolio of the U.S. Army Corps of Engineers. Primarily accomplished mission through twelve senior technical staff (Hydraulic, Cost and Construction Engineers) who oversee all complex technical aspects of modification work. Directed their work and provided them with strategic leadership, mentoring, coaching, counseling, team building, partnering, direction and management. Served as the Dam Safety Production Center (DSPC) Director's designated representative and liaison to the Nashville and Chicago District's Chief of Engineering and Construction for the overall oversight and execution of the dam safety modification mission. Ensured effective communication and coordination and maintained positive relationships with Dam Safety Officers throughout the Region. Provided oversight of dam safety engineering studies, designs, plans, specifications and cost estimates, engineering risk and reliability techniques, and regional dam safety portfolio management. Improved the safety and performance of engineering assets and provided improved approaches to common problems and solutions to new problems associated with the most complex, interrelated and unprecedented issues and threats associated with USACE dams. Provided regional leadership in the development and delivery of group and special training to the various elements of the Great Lakes and Ohio River Division (LRD) and USACE partners and stakeholders on dam safety, engineering assessments, and risk and reliability analyses. Assisted districts within LRD in the solution of complex, nationally significant, precedent-setting, or otherwise special engineering problems involving dam safety engineering, portfolio management, systems analysis, and risk assessment techniques. Developed, documented, applied, and maintained capacity within the DSPC workforce with regard to technology in dam safety engineering and risk and reliability analysis procedures and computer models for solving dam safety and closely associated engineering safety problems as related to public works infrastructure and the nation's constructed environment.



ROLE/RESPONSIBILITY

Construction Inspection / QA-QC
Testing Services

CERTIFICATIONS

- WVDOH Compaction Inspector
- WVDOH Aggregate Sampler
- WVDOH Portland Concrete Inspector
- ACI Level 1 Concrete Technician
- Smoke Certification
- OSHA 40 Hour Hazardous Waste Operations
- Pervious Concrete Technician
- Trenching and Excavation Competent Person
- Troxler 8 Hour Nuke Safety and Operation
- Troxler Radiation Safety Officer Training
- 40 OSHA Training

Michael Fleck

ENGINEERING TECHNICIAN • TRIAD ENGINEERING

Mr. Fleck is currently a Senior Engineering Technician at the Southwestern Region of Triad. Mr. Fleck's duties in this role have included quality control testing and inspection of soil, concrete, structural steel, and asphalt. Mr. Fleck has supervised as many as 2 engineering technicians on projects. He has provided project inspection and Quality Assurance/ Quality Control services on numerous building, site and highway and bridge projects throughout West Virginia. In addition, Mr. Fleck also trains newer technicians, and handles all job specific reporting.

Mr. Fleck has performed Quality Control Testing and Inspection on Numerous Highway/Bridges projects, Industrial and Commercial projects. He has provided these services throughout our service area of operations as can be seen on the following representative project list.

Dam and Impoundment Projects:

Elkwater Fork Dam – Elkins, WV
Wallback Dam – Wallback, WV

Water and Wastewater Projects:

Phase I and I Studies – Cadiz, OH
Phase II Water Distribution System – Mason, WV
East Beckley WWTP- Beckley, WV
Bradley WWTP- Bradley, WV



ROLE/RESPONSIBILITY

Underwater Inspection
and Repair Plans

EDUCATION

BS, 2004, Buildings and
Construction, Virginia Polytechnic
Institute and State University

CERTIFICATIONS

- OSHA 30-Hour Class
- Confined Space Training
- First Aid/CPR/AED
- USACE Construction Quality Management
- DEQ Responsible Land Disturber

YEARS OF EXPERIENCE

Total: 17
With Bander Smith: 11

Cameron J. Smith

PROJECT MANAGER • BANDER SMITH

Mr. Smith is a Project Management professional with 17 years of progressive experience in dam safety evaluations and repair work. He is experienced in planning, scheduling, estimating, and performing a wide variety of dam safety services and has helped to complete over 500 dam & marine related projects throughout the eastern half of the United States. He offers specialized experience in planning and supervising underway inspections of outlet control works on dams, to operate all moveable gates and drains fully open to close and assess their functionality. He will then plan, design and construct the necessary improvements including temporary bulkheads, chemical grouting, cement grouting, slip-lining conduits, trash and debris rack upgrades, hydraulic lines for operated-assisted gate opening systems, and valve rehabilitation plans. Related work can include siphons, graded filter drains, and concrete repair plans.

REPRESENTATIVE PROJECTS

- Brunswick Lake Dam - Brunswick County
- Burke Lake Dam - Fairfax County
- Fluvanna-Ruritan Lake Dam - Fluvanna County
- Icehouse Pond Dam - King & Queen County
- Walker Coleman Pond Dam - King & Queen County
- Spring Branch Pond Dam - King & Queen County
- Veterans' Memorial Dam – Orange County
- Lake Burton Dam - Pittsylvania County
- Briery Creek Lake Dam - Prince Edward County
- Lower Powhatan Lake Dam - Powhatan County



PROJECT EXPERIENCE AND REFERENCES

Royal Lake Dam (Pohick Dam No. 4)

FAIRFAX COUNTY, VIRGINIA

AMT provided the alternatives analysis and subsequent engineering design of the spillway (ASW) modifications to handle the Probable Maximum Flood (PMF) and other required improvements for this high-hazard dam. Services included surveying, geotechnical engineering, environmental; permitting, engineering design, structural engineering, bid-ready plans, technical specifications and construction cost estimates. The design report includes SITES modeling, HEC-RAS hydraulic modeling, the O&M plan, inspection staffing plan, structural engineering calculations for a concrete cutoff wall and chute blocks, ACB block sizing (TEK 11-12) and related engineering calculations and design documentation.

Engineering design plans included a spillway alignment change and extending the emergency spillway to the stream valley floor, raising training dikes and widening to a 115' bottom width for PMF capacity. Spillway armoring was designed using open-cell, tapered Articulated Concrete Blocks (ACBs) with sacrificial soils and grass lining on top. The design included engineering plans, NRCS NEH-642 federal specifications and related design details in coordination with the NRCS Ft. Worth and NRCS Virginia Offices, while staying in compliance with VDOT specifications, DCR impounding structure regulations, and the Fairfax County PFM requirements.

Other services included a water quality impact assessment, reforestation plan, and coordination of archaeological findings; a 30-inch water main relocation, trail restoration, and access road improvements. The low bidder (Angler Environmental) was within budget at \$1.4M, and construction was completed with low change orders, including an emergency response to Tropical Storm Hanna during construction.

Public outreach and communications by AMT included leading a citizen advisory committee and holding two (2) public meetings, working closely with the Braddock Supervisor's Office and the DPWES project manager.

This project won an ACEC Merit Award and was featured in Erosion Control Magazine for its innovative ACB mat design with a grass cover crop to minimize aesthetic impacts of the project.

Client Name and Contact Information:

Fairfax County Department of Public Works and Environmental Services (DPWES)

Contact: Dipmani Kumar

Phone: (703) 324-4612

Email: Dipmani.Kumar@fairfaxcounty.gov



Woodglen Lake Dam (Pohick Dam No. 3)

FAIRFAX COUNTY, VIRGINIA

AMT provided the alternatives analysis and subsequent engineering design of the spillway (ASW) modifications to handle the Probable Maximum Flood (PMF) and other required improvements for this high-hazard dam. Services included surveying, geotechnical engineering, environmental, permitting, engineering design, structural engineering, bid-ready plans, technical specifications and construction cost estimates.

The design folder includes SITES modeling, HEC-RAS hydraulic modeling, the O&M plan, inspection staffing plan, structural engineering calculations for a concrete cutoff wall, ACB block sizing (TEK 11-12) and related engineering calculations and documentation.

Engineering designs included a spillway alignment change and extending the emergency spillway to the stream valley floor, raising training dikes and widening to a 75' bottom width for PMF capacity. Spillway armoring was designed using open-cell, tapered Articulated Concrete Blocks (ACBs) with sacrificial soils and grass lining on top. The design included engineering plans, NRCS NEH-642 federal specifications and related design details in coordination with the NRCS Ft. Worth and NRCS Virginia Offices, while staying in compliance with VDOT specifications, DCR impounding structure regulations, and the Fairfax County Public Facilities Manual for a Public Improvement Plan.

For environmental planning, AMT developed an environmental assessment, trail restoration plans, a new construction access road past the elementary school, wetland delineations and permits, and onsite wetland mitigation. AMT also conducted a tree survey as part of the RPA designation and Water Quality Impact Assessment and helped coordinate plant rescue efforts. Public outreach included forming a citizen advisory committee, and holding two (2) public meetings, working closely with the Braddock Supervisor and DPWES staff.

The low bidder (EQR Environmental) at \$1.1M was below engineer's estimate (\$1.4M) and construction was substantially completed with low change orders. AMT assisted the County with bid and construction phase services for this project, including designing a groundwater collection system during construction to handle three (3) springs encountered during the initial clearing and grubbing operations.

Client Name and Contact Information:

Fairfax County Department of Public Works and Environmental Services (DPWES)

Contact: Dipmani Kumar

Phone: (703) 324-4612

Email: Dipmani.Kumar@fairfaxcounty.gov



Todd Lake Dam (Upper North River Dam No. 10)

AUGUSTA COUNTY, VIRGINIA



Through a countywide term contract for civil engineering, AMT was issued a task order to provide construction management services for Augusta County for this flood control dam. Don Rissmeyer served as the Construction Project Manager for Augusta County, as an extension of the county, Headwaters SWCD, and NRCS staff.

Prior to AMT's involvement, the NRCS Virginia provided the engineering design and technical support for the project, and they agreed to allow Mr. Rissmeyer as a substitute for their NRCS construction manager who moved away just prior to the bid phase, to keep the project moving forward.

AMT reviewed and incorporated the NRCS design into a bid package for this project working closely with the county finance department. AMT then led the pre-bid meeting and issued two (2) bid addenda, resulting in a successful bid opening with the low bidder (Howdyshell Excavating) at \$3.0M which was below NRCS engineer's estimate (\$3.6M).

AMT also assisted in coordinating the acquisition of the DCR Alteration Permit, Corps Nationwide Permit 3, U.S. Forest Service Permits for Timber Removal and Forest Road Use (George Washington National Forest), and worked with the contractor on the Stormwater Pollution Prevention Plan submittal in advance of securing an Augusta County Land Disturbance Permit.

Client Name and Contact Information:

Augusta County
18 Government Center Lane
Verona, VA 24482
Contact: Doug Wolfe, PE
Phone: (540) 245-5700
Email: wolfe@co.augusta.va.us

Two (2) pre-construction meetings were held onsite with Howdyshell Excavating for overall coordination and to provide an orientation to the temporary Emergency Action Plan (signed by the EMS coordinator) for safety during construction. Monthly progress meetings were then held onsite and all submittals were reviewed by Mr. Rissmeyer. After a winter shutdown, construction was completed with less than 3% change orders and the final punch list and closeout of permits was also completed in spring 2016.

Recently, Mr. Rissmeyer assisted Howdyshell Excavation with the dewatering plans, temporary shoring and bracing plans for their construction work at the Hearthstone Dam with Augusta County (UNR 77).

Briery Creek Lake Dam

PRINCE EDWARD COUNTY, VIRGINIA

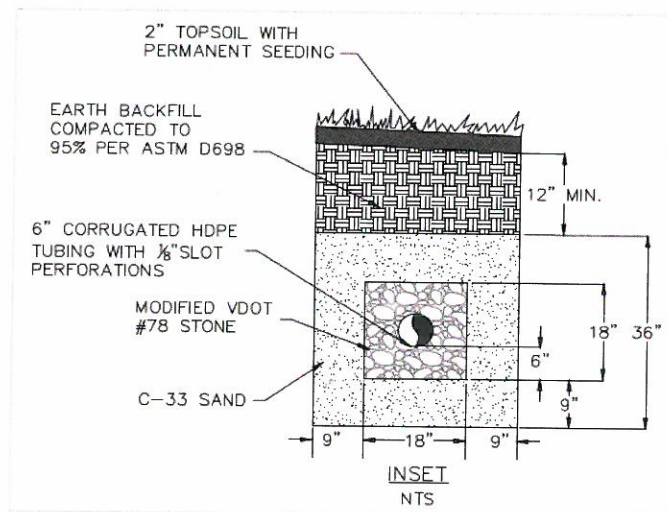
Through a statewide VDGIF term contract, AMT is providing dam safety and related engineering services for a portion of the 40 regulated dams on VDGIF properties and throughout Virginia. This includes the rehabilitation plan for Briery Creek Lake Dam.

This project began with a Preliminary Engineering Report (PER) to verify previous hydrologic and hydraulic modeling, confirm the high hazard classification, and conduct a PE dam inspection to identify all deficiencies to be addressed. The recommendations included a cost estimate within the DGIF "not to exceed" budget for this project.

AMT also conducted supplemental surveying within the planned limits of construction and secured a jurisdictional determination and Nationwide Permit 3 from the Corps of Engineering for wetland impacts. A DCR Alteration Permit was also obtained.

The engineering design includes vegetation removal within 25' of the dam, within the auxiliary spillway and on the earthen causeway using hand cutting and herbicide treatment plans. It also includes a graded filter drain along the downstream toe of dam, where adjacent wetlands were a concern. Other design features include new trash racks with stainless steel hardware, danger signs on the principal spillway riser, mow markers, and two (2) new staff gages. Hauling and access plans, erosion and sediment control plans, and staging areas were also incorporated into the engineering design.

Bidding was successfully completed in May 2015 with the low bidder Keith Barber Construction at \$98,000 which was approximately 5% below the engineer's estimate (\$103,000). Construction was completed with low change orders (\$5,000) in the fall 2015.



Graded Filter Drain

Client Name and Contact Information:

Department of Game and Inland Fisheries (DGIF)
7870 Villa Park Drive, Suite 400, Henrico, VA 23228
Contact: John Fogg
Phone: 804-314-0104
Email: John.Fogg@dgif.virginia.gov



Upper Powhatan Lake Dam

POWHATAN COUNTY, VIRGINIA

Through a statewide term contract, AMT is providing dam safety and related engineering services for a portion of the 38 regulated dams on DGIF properties and throughout Virginia. This includes Upper Powhatan Lake Dam.

For this 150-year-old dam, DGIF has had some issues in recent years starting with an extreme storm event in June 2004 which caused the overtopping of the dam, and led to the eventual breaching of the dam and a subsequent chain-reaction breaching of Lower Powhatan Lake Dam. Repairs unfortunately were completed shortly before the 2008 regulatory changes which led to a re-study and classification of both these dams as high hazard. As a result, DGIF completed an incremental damage assessment in 2014, and determined the Spillway Design Flood (SDF) for Upper Powhatan Lake Dam to be 0.3 PMF which is approximately double the current spillway capacity.

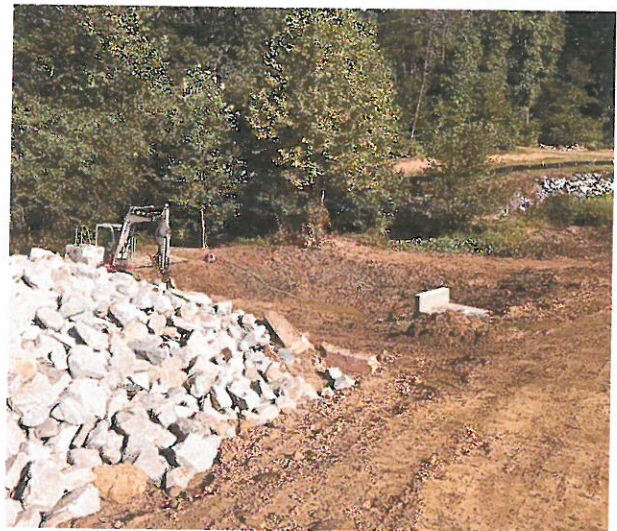
AMT services began with a Preliminary Engineering Report (PER) to evaluate previous hydrologic and hydraulic modeling, confirm the high hazard classification (and IDA results), and conduct a PE dam inspection to identify all deficiencies to be addressed. This includes addressing seepage concerns in the existing rock spillway, standing water along the downstream toe of the dam, and woody vegetation within 25' of the dam. Additionally, AMT has determined that the dam can be raised 4.2' in order to safely convey the SDF at the least cost.

The final engineering designs and cost estimates were completed in the spring 2016, with DEQ Stormwater and DCR Alteration Permit approvals along with a Nationwide Permit 3 (Corps of Engineers).

Bidding was successfully completed in July 2016 with the low bidder being Keith Barber Construction at \$676,020 which is approximately 8% below the engineer's estimate (\$731,952). Construction is just getting underway in August 2016, with 90 calendar days for substantial completion, and 30 days for final completion.

Client Name and Contact Information:

Department of Game and Inland Fisheries (DGIF)
7870 Villa Park Drive, Suite 400, Henrico, VA 23228
Contact: John Fogg
Phone: 804-314-0104
Email: John.Fogg@dgif.virginia.gov



Building a Rip-Rap Plunge Pool

Keaton's Run Dam Modifications and Repairs

ORANGE COUNTY, VIRGINIA

AMT has been providing dam safety services on the Keaton's Run Dam to Lake of the Woods Association (LOWA) since 2008. This has included PE dam inspections, three Table Top Exercises, helping develop performance specifications for new weather monitoring equipment, and assisting with other annual reporting requirements to DCR in accordance with their Reduced SDF Permit.

The engineering design requested by LOWA in 2011 required an as-built survey of the concrete spillway and structural assessment, concrete repair plans, CCTV inspection of the low flow drain (no repairs needed), civil engineering design plans, and environmental permits including a DCR Construction Permit in July 2011.

The design included major concrete repairs to the ogee weir, joint replacement, waterproofing and cleaning of the concrete spillway, and a "wedge and level" kit for the Rodney Hunt sluice gate. Since then, the "wedge and level" kit has failed, and the Rodney Hunt sluice gate was replaced by an Orbinox Knife Gate (Bander Smith) in 2014.

The work required spillway dewatering with an inflatable dam and a 10" PVC pipe siphon built on the dam for water management, as well as a temporary Emergency Action Plan (EAP) for use during construction.

Environmental services included a Section 404 permit for wetland impacts, Erosion and Sediment Control plans, and a Stormwater Pollution and Prevention Plan.

Project construction began in December 2011 and was completed by W.E. Bowman Construction in March 2012 with low change orders (\$122,393). This was 14% below the Engineer's Estimate (\$142,732).

Client Name and Contact Information:

Lake of the Woods Association, Inc.
102 Lakeview Parkway, Locust Grove, VA 22508
Contact: Jessie Graves, Director of Facilities
Phone: 540-972-2254
Email: jgraves@lowa.org



Veteran's Memorial Dam

ORANGE COUNTY, VIRGINIA

AMT has been providing dam safety services on the Veteran's Memorial Dam since 2008. This initially required an engineering study of available options to upgrade the spillway capacity to meet the Probable Maximum Flood (PMF) for this high hazard dam. The resulting recommendation was to build a second auxiliary spillway on the dam, with a second concrete chute and steel crest gates to be lowered during an extreme storm event.

The engineering design required surveying, geotechnical engineering investigations, environmental services, civil engineering design, structural engineering design (concrete chute spillway per NEH-14), erosion and sediment control plans, access and staging plans, and performance specifications for an operable steel gate (SteelFab or Rodney Hunt). With an estimated construction cost of \$5.1M, the project was designed and approved for construction by DCR and the Corps. AMT also managed the contractor pre-qualification and bid phases, resulting in a \$4.5M construction contract to Faulconer Construction. As a result of changes to the impounding structure regulations (SB276) in 2010, the project was cancelled shortly after the construction work began.

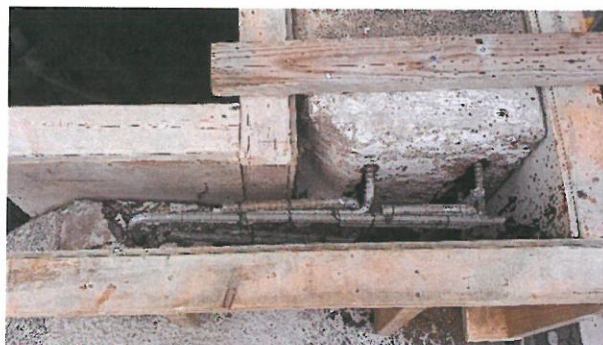
Since then, AMT has conducted PE dam inspections, led three Table Top Exercises, helped develop performance specifications for new weather monitoring equipment, and assisted with other annual reporting requirements to the DCR dam safety division.

In 2013, AMT was hired to perform a structural assessment of the existing concrete chute spillway and to secure Corps and DCR construction permits for concrete repairs in the spillway, including the replacement of the Rodney Hunt sluice gate (with an Orbinox Knife Gate), replacement of the manual controls for the low flow drain, installation of a toe drain, and a culvert replacement. The work also required dewatering with a 10-inch PVC pipe siphon built on the dam for water management, as well as a temporary Emergency Action Plan (EAP).

After securing the DCR construction permit in July 2014, the work was executed through negotiated contracts with Keith Barber Construction (\$198,600) and Bander Smith (\$96,400) in late Fall 2014. All work was completed within <10% of the engineer's estimate (\$270,102).

Client Name and Contact Information:

Lake of the Woods Association, Inc.
102 Lakeview Parkway, Locust Grove, VA 22508
Contact: Jessie Graves, Director of Facilities
Phone: 540-972-2254
Email: jgraves@lowa.org



Lake Forest Estates Dam Rehabilitation

JEFFERSON COUNTY, WEST VIRGINIA



The Lake Forest Estates dams include primary and secondary earth fill dams located in adjacent valleys. The dams are connected by an open channel originally thought to be the principal spillway for the primary dam. In 2005, the Owner was notified by the WVDEP Dam Control Division that the dams were under the State's jurisdiction, and they were ordered to complete an engineering study and safety assessment. Problems which were initially identified included excessively steep slopes, uncontrolled embankment seepage, large trees on the embankments, blocked spillway channels, and a non-functional riser in the secondary dam.

Initial stability evaluations indicated that the dams did not meet present safety standards. Furthermore, hydrologic and hydraulic analyses proved that the dams would not comply with State standards for the design storms. Rehabilitation design included flattening of the upstream and downstream slopes, a blanket drain and filter system to control seepage and enhance stability of the primary dam, a new overflow weir and discharge channel for the primary dam, a new principal spillway riser and outlet for the secondary dam, and a new emergency spillway channel for the secondary dam. Design plans, specifications, reports and an Emergency Action Plan were submitted and approved by WVDEP. Construction was accomplished during the construction season with full-time monitoring and testing by Triad. Final inspection and approval by WVDEP were achieved.

Client Name and Contact Information:

Lake Forest Estates
115 Neenah Court, Harpers Ferry, WV 25425
Contact: Mr. James M. Corey
Phone: 304-724-1430
Email: jcorey48@gmail.com



Ferndale Lake Dam Rehabilitation

HAMPSHIRE COUNTY, WV



Triad conducted a site visit to review current conditions associated with concerns of recent seepage, failure of the principal spillway concrete discharge apron, and seepage along the principal spillway pipe. Identified during initial inspection included erosion at the discharge end of the principal spillway pipe in addition to piping failure above the pipe alignment and midway between the dam crest and discharge point.

Triad was charged with designing principal spillway repairs and drainage measures to containerize seepage along each groin and route them to the principal spillway discharge channel.

Engineering services provided by Triad consisted of inspection, design of replacement filter diaphragm, preparation of construction plans, preparation of technical specifications for construction repairs, preparation, and approval, of a design report for review by the WVDEP – Dam Safety, and preparation of WVDEP – Dam Safety forms DS-1 and DS1A. The project included control services during construction of repairs.

Client Name and Contact Information:

Ferndale Lake Dam
PO Box 42, Springfield, WV 26763
Contact: Josh Haza
Phone: 304-492-4050
Email: jkhaza@frontiernet.net



On-Call Dam Maintenance Services

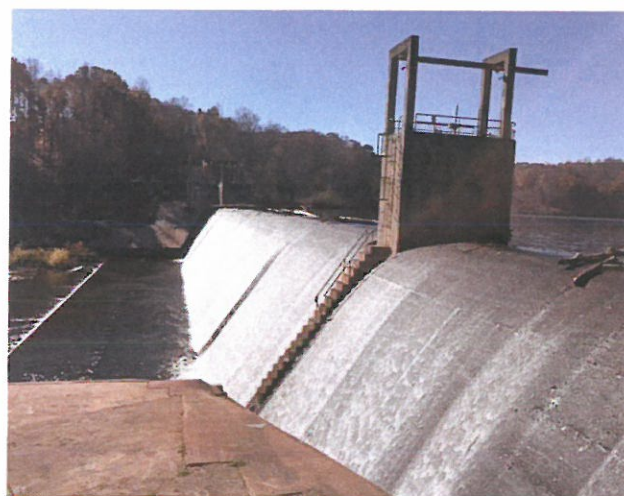
ALBEMARLE COUNTY, VIRGINIA

Bander Smith holds a multi-year term contract with the Rivanna Water & Sewer Authority (RWSA) in Charlottesville, VA owns some of the largest dams in Virginia, as noted below.

- The South Rivanna Dam is a concrete gravity dam that was constructed in 1966. A hydroelectric facility was added in 1988. The dam is 54 feet tall (spillway height) and the spillway is 525 feet long. The dam is currently classified as a high hazard dam. The South Fork Rivanna Reservoir serves as a water supply reservoir for the area.
- The Sugar Hollow Dam is a concrete gravity dam that was constructed in 1947 and rehabilitated in 1999. The dam has a rubber bladder across the spillway which raises the elevation of the reservoir 5 feet. The dam is approximately 77 feet tall (including inflated bladder) and the spillway is 255 feet long. The dam is currently classified as a high hazard dam. The Sugar Hollow Reservoir serves as a water supply reservoir for the area.
- The New Ragged Mountain Dam is a recently constructed dam which went into service in 2014. The earthen embankment dam is 129' tall and approximately 800 feet long. The dam is currently classified as a high hazard dam and serves as a water supply reservoir for the area.
- The Beaver Creek Dam is an earthen embankment that was constructed in 1964. It is approximately 60 feet tall and 530 feet long. The dam is currently classified as a high hazard dam. The Beaver Creek Reservoir serves as the water supply reservoir for the Crozet service area and has an ancillary flood control function for downstream properties.
- The Totier Creek Dam is an earthen embankment that was constructed in 1970. The dam is approximately 35 feet tall, 277 feet long and is currently classified as a low hazard dam. Totier Creek Reservoir serves as a water supply reservoir for the Town of Scottsville, VA.
- Lickinghole Creek Dam is a concrete gravity dam that was constructed in 1995. The dam is 18 feet tall (spillway height) and is currently classified as a low hazard dam. The Lickinghole Creek Reservoir serves as a sediment storage basin.
- RWSA also owns and operates two low-head dams, one on the North Fork of the Rivanna River and one on the Mechums River. These fall below the size requirements for regulated impounding structures. A small pond dam located on the RWSA Buck Mountain Property in Free Union, Virginia is also owned by RWSA and is currently under evaluation for possible improvements and determination of regulatory requirements.

Client Name and Contact Information:

Rivanna Water & Sewer Authority
695 Moores Creek Lane, Charlottesville, VA 22902
Contact: Victoria Fort, PE
Phone: 434-977-2970 (Ext. 205)
Email: vfort@rivanna.org



Bander Smith's work under this contract includes, but is not limited to evaluation and repair of dam components, including but not limited to gates and other flow control devices, concrete structures, and embankments; brush and tree cutting and removal; cleaning and jetting drains, removing debris, dive services for underwater inspections, emergency repair needs, or other on-call services at any of the dams or ancillary structures which are owned or operated by RWSA.

Approach and Methodology

PROJECT UNDERSTANDING

The West Virginia Army National Guard (WVARNG) seeks a qualified engineering firm to provide professional engineering design services for the Pierce Lake Dam at Camp Dawson in Kingwood, West Virginia. The evaluation, design and construction bid documents should address signs of leakage through the downstream face of the dam, and provide a maintenance plan to help evaluate future potential issues to include a new control structure. We understand that the award, execution and completion of this engineering services contract is contingent upon receipt of funding.

PROJECT GOALS AND OBJECTIVES

The WVARNG project goals and objectives include:

Goals/Objective 1: Provide a complete design including all engineering and architectural disciplines and supervision thereof, to prepare construction bid documents for West Virginia State Purchasing. Key design focus is to design a repair for the earthen dam at Pierce Lake that stops the leak and is sustainable.

Goals/Objective 2: Designer shall design a new control structure for Pierce Lake, if deemed necessary during the engineering assessment.

Goal/Objective 3: Designer shall be responsible for researching and investigating the location of existing underground and above ground utilities, and to provide drawings mapping both existing and proposed utilities. Designer to provide drawings and specifications of any and all utility changes.

Goal/Objective 4: Designer to provide all geotechnical work to include any necessary drill borings and provide owner with all boring maps and geotechnical reports.

Goal/Objective 5: Drawings and specifications are to be submitted at 35%, 65%, 95% and 100%. Designer may submit 35%, 65% and 95% drawings and specifications digitally; 100% construction documents are to be submitted both digitally and 3 hard copies. Cost estimates are to be revised and submitted with each submittal at 35%, 65%, 95% and 100%.

Goals/Objective 6: Provide construction bid services to the Owner with construction bid documents based on state purchasing procedures.

APPROACH AND METHODOLOGY

The following approach and methodology to achieve the stated project goals and objectives will be followed for Pierce Lake Dam at Camp Dawson.

PROJECT KICKOFF AND NTP

Following receipt of notice-to-proceed, AMT will schedule a kickoff meeting with the WVARNG and other agency representatives to be involved in the project. The meeting will be attended by our Project Manager and key design staff identified in areas of technical expertise by our staffing plan. Project goals will be verified in relation to the scope, schedule, operations, and deliverables for this project to include preliminary discussions about all known questions or concerns for the dam and lake's long-term sustainability as part of base operations.

Goals/Objective 1: Provide a complete design including all engineering and architectural disciplines and supervision thereof, to prepare construction bid documents for West Virginia State Purchasing. Key design focus is to design a repair for the earthen dam at Pierce Lake that stops the leak and is sustainable.

PRE-DESIGN SERVICES

The AMT team will provide comprehensive and expert services related to the review of base records, dam inspections, survey and utility mapping of site conditions, geotechnical studies and recommendations and other types of pre-design services for your dam as described in more detail, below.

Review of Existing Information: AMT will setup a secure repository and chain of custody for base records, to then obtain and review previously prepared studies and reports, such as the following requested information for our pre-design services on this dam.

- As-Built drawings and design information for the dam including geotechnical borings and investigations,

hydrologic and hydraulic modeling, structural drawings and other dam records.

- Dam inspection reports, with photos, sketches and measurements of any deficiencies or concerns including observations during extreme weather events and piezometer readings, if available.
- Dam operation and maintenance plans, including records for any repairs, replacement work, and rehabilitation work on the dam.
- Current dam operational certificates and related file information for permits with all permit conditions for regulatory compliance, including emergency preparedness plans and drills/exercises.

AMT is also interested in the availability of the following types of additional documentation which could help inform our evaluation of dam problems and possible solutions to be investigated, making best use of previously developed and available information for your dam.

- Other previous hydrologic and hydraulic evaluations or engineering models for the watershed or dam, including a dam breach analysis.
- GIS Data and watershed studies for the dam, lake water quality studies and flood inundation zones and inundation maps downstream of the dam.
- Other GIS Data (land use, property ownership, roads, utilities, environmental features, etc.)
- Sediment or bathymetric surveys of the lake.

Preliminary Field Investigation: After a thorough review of available data, AMT will prepare a literature report to summarize our findings, setup preliminary base mapping using a combination of GIS data and record drawings (as-builts), and schedule a field investigation of the dam with interested parties.

Upstream watershed characteristics and the downstream inundation zone (flood risks) can also be investigated using a technique called a 'windshield tour'. With maps in hand, we will drive accessible portions of the watershed and downstream waterways verifying topographic high points and watershed features including land use patterns and overall topography. Field visits can help verify the engineering model results where survey information such as high-water mark observations, channel erosion and flood affect, debris factors, and other observations can be made. In addition to the windshield tour, the area can be investigated and documented by our Unmanned Aerial

Vehicle (UAV) fleet considering base security and air space restrictions to be coordinated with the WVARNG.

Dam Inspection Report: Depending on the frequency of past dam inspections, a WVDEP Dam Safety (DS) inspection report will be prepared to document our findings and recommendations for dam repairs. Required site investigations for a dam inspection are performed on the earthen embankment, control structure, principal spillway tower, auxiliary spillway, and downstream outfalls, which include:

- Woody vegetation and trees near the embankment
- Riser/spillway blockages or damage
- Slope erosion, animal burrows, stability concerns
- Seepage, sloughing, depressions, and/or settlement due to groundwater or leakage concerns.
- Lake or shoreline concerns, upstream such as soft spots and missing vegetation due to wave erosion or animal activity along the shoreline
- Concrete structure investigation by visual inspection of cracks, spalling, control joints, openings, debris or obstructions, corrosion, joint displacements, trash racks, low flow drains, valves and sluice gates.
- Principal spillway pipe seepage, joint displacement, undercutting, corrosion or other internal issues.
- Emergency spillway erosion or head-cutting, seepage concerns and standing water, sloughing, cracking, spalling, and displacements including the condition of spillway armoring and vegetative cover.
- Outfall blockages, erosion and adjacent downstream concerns in flood risk areas.

Observed conditions will be photographed and documented with field sketches, measurements, and notes for the dam inspection report.

DESIGN SERVICES

The AMT team will provide a complete design for this earthen dam at Pierce Lake, including supervision of all technical and engineering disciplines involved. The main purpose of this design will be a repair that stops the leak and is sustainable for the future, by considering the maintenance questions and concerns as part of a comprehensive maintenance plan for this dam.

Our designated Project Manager will lead and supervise the pre-design services related to the evaluation of existing records and previous reports, dam inspections,

hydrologic and hydraulic modeling for the watershed and dam, lake conditions, dam conditions, utility locating and mapping, dam as-built surveying, geotechnical investigations and recommendations for your dam, and possibly underwater inspection of the outlet works.

Once all of these pre-design services are completed, our designated Project Manager will lead and supervise the engineering design through milestone submittals at the 35%, 65%, 95% and 100% design completion stage. This will include engineering plans, technical specifications, construction cost estimates and other design documentation and reports in a design folder.

The 65% design will be utilized to start the permitting and design approval process with all significant design elements fully details for the 95% plans. The 100% design will include final plans, specifications and cost estimates to form the basis for bid and construction phase services. Bid and construction phase services will then be managed by our Project Manager, supported by our local construction manager and technicians for QA/QC testing and inspections. Final record drawings and a comprehensive maintenance plan will then be provided prior to project closeout.

Goals/Objective 2: Designer shall design a new control structure for Pierce Lake, if deemed necessary during the engineering assessment.

UNDERWATER INSPECTION REPORT

Site investigation of the dam's control structure can be provided through an underwater inspection team from **Bander Smith, Inc.** and for confined space entry inside the principal spillway conduit and outlet works. This report will typically include the following additional information.

- Confined space and dive plans for safety with team safety briefings and coordination.
- Video documentation of the inside of the conduit and riser tower including pipe joints and gaps, damage, leakage and other observations.
- Tactile inspection of the outside of the structure including gates and controls.
- Operation of all gates and controls from fully closed to fully open condition to assess their condition and functionality.

The Bander Smith report will then include all field sketches, site photos, CCTV videos, report narratives and cost estimates to describe the investigation of the

control structure that was conducted, and any recommended repairs, upgrades and replacement structures to ensure long-term operation and use of your dam and it's outlet works.

Our lead investigator from Bander Smith will then provide design support for the 35% and 65% designs of civil engineering plans for the outlet works.

Goals/Objective 3: Designer shall be responsible for researching and investigating the location of existing underground and above ground utilities, and to provide drawings mapping both existing and proposed utilities. Designer to provide drawings and specifications of any and all utility changes.

The close proximity of existing underground and above ground utilities to this dam, and the importance of those utilities to sustainable base operations, makes the design of all utility protection measures, adjustments and relocations or betterments an important part of the overall strategy for the dam. Researching and investigation the location of these utilities will be the primary responsibility of our Project Surveyor along with topographic mapping of the dam, and bathymetric mapping of the lake as required for the design.

UTILITY RECORD DRAWINGS

The AMT team will begin our research for the location of existing underground and above ground utilities from past projects at Camp Dawson - where Triad Engineering has already established physical conditions of utilities and infrastructure by ground survey work.

Any other or additional survey information provided by the WVARNG will also be reviewed and utilized to develop composite utility mapping and help determine utility survey needs during the initial kickoff meetings and coordination for this project.

UTILITY SURVEYING

Based on the location and extent of existing utilities, utility locating services can then be coordinated to establish paint marks, pin flags and redlines of the location of underground utilities. Survey control points can be used to re-establish horizontal control at the base for our survey team, who can then field locate all utility appurtenances and location markers within the limits of

hollow stem augers or sonic drilling for approval by the Owner's team prior to mobilizing to the project site.

Step 2: Scheduling of a site visit by the geotechnical investigation team to review the approved geotechnical investigation plan in relation to base security and access requirements, and to confirm dates of fieldwork.

Step 3: Field samples and laboratory testing will be completed with documentation and restoration work under the supervision of the Lead Geotechnical Engineer.

Step 4: The geotechnical report will be prepared, signed and sealed by a West Virginia professional engineer (Randy Moulton, PE) or the investigating professional geologist (Robert Sykes, PG), both of whom will work closely together on dam projects. The report will include laboratory results, embankment slope stability recommendations, seepage control rates and recommendations for controlling water, summary of results and recommendations for improvements and/or rehabilitation plans.

Our lead geotechnical engineer will then provide design support for coordination of the civil engineering design plans to the geotechnical engineering recommendations including reviewing technical specifications for construction materials and quality control requirements.

As part of construction phase services, our geotechnical engineering team will also provide construction inspections and materials testing for water management issues, removal of unsuitable soils, rock excavation, concrete placement, and related matters for quality control and assurance.

Goals/Objective 5: Drawings and specifications are to be submitted at 35%, 65%, 95% and 100%. Designer may submit 35%, 65% and 95% drawings and specifications digitally; 100% construction documents are to be submitted both digitally and 3 hard copies. Cost estimates are to be revised and submitted with each submittal at 35%, 65%, 95% and 100%.

Based on the studies and pre-design services described above, drawings and specifications will be prepared for this dam at the 35%, 65%, 95% and 100% level of completion for the engineering design. Milestone submittals will be made electronically, with the 100%

construction documents to be submitted both digitally and with three (3) hard copies. Cost estimates will also be provided with each design submission.

DESIGN PLANS

Milestone submittals of the construction drawings are planned at the 35%, 65%, 95% and 100% level of completion, including a cover sheet, notes sheet, layout and dimensional plans, erosion and sediment control plans, grading and drainage plans, design profiles, design cross sections, access roads and staging areas, utility protection and relocation designs (if any), environmental mitigation plans (wetlands, reforestation, etc.), design for concrete structures (structural concrete repairs, waterproofing, replacements, etc.), gates and controls, staff gages, civil detail sheets (security fencing, swing gates, parking area, boat launch area, vegetative measures, etc.) and any other dam related amenities or maintenance requirements.

CONSTRUCTION COST ESTIMATES

An engineer's estimate of probably construction costs will be provided with each milestone submittal of the design for this project. Plan measurements for all pay items will be based on CAD drawings and earthwork volumes will be estimated using digital terrain models for the existing and proposed ground surface elevations with multiplying factors based on soil types. Unit costs will be based on recent, similar projects by AMT, Triad, Bander-Smith and the WVARNG. When possible local bid tabulations and bidders will be considered for these anticipated construction costs, with a factor for changing economic conditions and any special conditions for the Pierce Lake Dam at Camp Dawson.

TECHNICAL SPECIFICATIONS

Standard NRCS construction and material specifications will be included in the 65%, 95% and 100% submittals for this project. These are typically developed based on NEH Part 642 "Specifications for Construction Contracts", USDA Field Office Technical Guide (FOTG) or from other recent AMT projects with specification templates to fit the project needs. References to the West Virginia Department of Highways (WVDOT) and local standards and specifications can also be made where necessary.

DESIGN FOLDER

Narrative reports and supporting calculations for the engineering design will be assembled into a design folder

for the milestone submittals at the 65% and 95% level of completion for this project, in anticipation of final approval prior to the 100% design submittal for plan and estimate on this project.

The design folder typically addresses the design goals and objectives, supporting data and studies, assumptions, design procedures followed, dam hazard classification and regulatory requirements, hydrologic and hydraulic modeling, survey and utility base mapping (half-sized), engineering design plans (half-sized), structural engineering calculations for the design, plan quantity calculations and earthwork estimates, cost estimates, construction schedule, O&M plan, inspection staffing plans, temporary emergency action plan (EAP) for use during construction, permit actions and conditions for the project, and other supporting information necessary for design document and approval needs.

DAM MAINTENANCE PLAN

For this project, the WVARNG has specified the need for a dam maintenance plan going forward. This plan will be submitted with the 65%, 95% and 100% design submittals and will include previous maintenance issues, resolution of those concerns, future maintenance needs, frequency of inspection and maintenance work required, schedule for operating and maintaining valves and drains, grass maintenance requirements, rodent control measures (if necessary), monitoring water levels with piezometers and other types of maintenance recommendations by working closely with responsible parties at Camp Dawson to ensure sustainability of the dam repairs and future maintenance needs.

Goals/Objective 6: *Provide construction bid services to the Owner with construction bid documents based on state purchasing procedures.*

Upon receipt of all design and permit approvals, AMT's Engineer of Record will assist the WVARNG Construction and Facilities Management Office and the Acquisition and Contract Administration Section of the West Virginia Purchasing Division with services for a public bid in accordance with state purchasing procedures. No alternate bid items will be proposed in the bid documents as stated in the EOI request.

Services typically include the following:

- Assistance prior to bidding in assembling the bid and contract documents with the approved design for the advertisement of bids.
- Assistance during the Bid Phase with a pre-bid meeting agenda, pre-bid meeting notes, bid addenda, and other assistance leading to the bid opening.
- Assistance during the Procurement Phase including a bid analysis and recommendation of award, leading to a Construction Contract within available funds.
- Construction Management including leading a pre-construction meeting, reviewing/approving monthly pay requests, and reviewing/approving all submittals throughout the project including RFI's, change orders, test reports, and other project documentation in accordance with WVARNG and state project requirements.
- Substantial and Final Completion inspections, including punch lists for final acceptance of the completed work and a release of retainage.
- A construction completion report (with as-builts) along with electronic copies of all construction documentation and records prior to project closeout and a release of retainage.

Other construction phase services can also include construction inspections and related services by our qualified and certified personnel to include the following:

- On site Quality Assurance inspections as necessary to include periodic or daily inspections in accordance with an approved Quality Assurance Plan in the design folder for the project.
- On site Construction Materials Testing (by Triad's geotechnical engineering team) as part of our Quality Assurance services, coordinated in addition to the Contractor's responsibilities for materials testing during construction, as well as any additional testing that may be required based on progress of the work.
- Environmental permitting and inspections to include adherence to permit conditions for the project, and coordination with permitting agencies based upon the work, and for any issues encountered.
- Preparation of as-built construction drawings by a West Virginia licensed surveyor (AMT survey manager) along with any quantity measurements for earthwork and other pay items.

QA/QC PROGRAM GOALS

QA/QC Overview: Delivery of a quality project is AMT's primary goal, and we maintain a rigorous QA/QC Program to assure accuracy and completeness of contract documents, compliance with standards, and adherence to budgets and schedules. Don Rissmeyer, PE, CFM, Project Manager, will be responsible for Quality Control, and Mike Wiercinski, PE, PS is responsible for Quality Assurance. All review comments will be compiled at each submittal stage, and a response will be prepared and returned to the County and review agencies so that any areas of disagreement may be discussed. A checklist of changes and comments will assure that all comments are incorporated into the subsequent submittal stage.

Achievement of Quality Control: AMT has developed and utilizes quality control procedures that are required through all phases of a project. The process starts with and is the responsibility of Mr. Rissmeyer, the Project Manager, who has 30 years of extensive dam engineering, regulatory, planning and civil engineering design experience involving 35 dams in recent years. He is supported by a strong technical staff of engineers, planners, landscape architects, and surveyors, who perform independent checks of all assignments within their discipline. In addition, AMT incorporates a quality control check at each milestone during each phase of design and construction.

AMT incorporates a quality control program check at each project deliverable. QC checks are utilized, and revisions are made prior to client submittals. For these QC checks, Mr. Rissmeyer will appoint experienced engineers as independent checkers or check things himself.

The checking of construction documents at the various milestones employs the use of the ASCE method (yellow/red/green approach) for the verification of all computations and plans. The use of these standard colors identifies exactly when the document has been checked and is acceptable.

Achievement of Quality Assurance: Mr. Wiercinski, PE, PS will monitor the overall project progress to ensure that schedules are met, and appropriate personnel are provided in support of the Project Manager at all times. Additionally, Mr. Rissmeyer will review QC documents on file, and ensure that all QC requirements of our corporate program are being met for each task order assignment.

Quality Results: In recent years, our quality assurance and control programs have allowed us to receive above average consultant evaluation scores from our clients in most cases, and our projects have an average change order value of less than 3% of the construction cost with few extensions of time for the planned work.





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

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

Proc Folder: 720409

Doc Description: Camp Dawson Pierce Lake Dam Repair Design

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2020-04-27	2020-05-14 13:30:00	CEOI 0603 ADJ2000000010	1

BID RECEIVING LOCATION

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON

WV 25305

US

VENDOR

Vendor Name, Address and Telephone Number:

A. Morton Thomas and Associates, Inc.
417 Grand Park Drive, Suite 104
Parkersburg, WV 26105
304-400-4952

FOR INFORMATION CONTACT THE BUYER

Tara Lyle
(304) 558-2544
tara.l.lyle@wv.gov

Signature X

FEIN # 52-0728302

DATE May 14, 2020

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

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

Michael J. Wiercinski - Principal

(Name, Title)

Michael J. Wiercinski - Principal

(Printed Name and Title)

417 Grand Park Drive, Suite 104, Parkersburg, WV 26105

(Address)

304-400-4952 / 304-400-4953

(Phone Number) / (Fax Number)

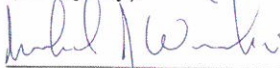
mwiercinski@amtengineering.com

(email address)

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

A. Morton Thomas and Associates, Inc.

(Company)

 Principal

(Authorized Signature) (Representative Name, Title)

Michael J. Wiercinski - Principal

(Printed Name and Title of Authorized Representative)

May 14, 2020

(Date)

304-400-4952 / 304-400-4953

(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

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

DEFINITIONS:

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

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

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

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

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: A. Morton Thomas and Associates, Inc.

Authorized Signature: [Signature]

Date: May 14, 2020

State of Maryland

County of Montgomery, to-wit:

Taken, subscribed, and sworn to before me this 14th day of May, 2020

My Commission Expires March 23, 2020

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature]
Purchasing Affidavit (Revised 01/19/2018)