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WV Purchasing Division

West Virginia Department of Agriculture

Cedar Lakes Dam Restoration/Warehouse Slope Stabilization Project

SOLICITATION NO. AGR1800000001



February 1, 2018

AMT

A. Morton Thomas and Associates, Inc.
Consulting Engineers

West Virginia Department of Agriculture
Department of Administration
Purchasing Department
2019 Washington Street East
Charleston, WV, 25305-0130



February 1, 2018

West Virginia Department of Agriculture
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Re: **Response to CEOI 1400 AGR1800000001**
A&E Services for Cedar Lakes Dam Restoration/Warehouse Stabilization Project
AMT File: P18-0039

Dear Members of the Selection Committee,

A. Morton Thomas and Associates, Inc. (AMT) is pleased to submit four (4) copies of this proposal to provide engineering, construction administration services, and geotechnical investigations for necessary for the modifications and/or repairs to Cedar Lakes Dams No. 1 and No. 2 and the warehouse stabilization of the 30' x 60' soil slip area near the small warehouse as stipulated in the RFP and Addendum No. 1 issued on January 22, 2018.

We offer the West Virginia Department of Agriculture (WVDA) our extensive dam related experience focused on the impounding structure regulations and permit requirements throughout the Mid-Atlantic region. Our comprehensive team of experts have the experience for the entire project area, whatever may arise, including engineering design, permitting and approvals, bid phase assistance, and construction administration, as well as supporting surveying, environmental, geotechnical, structural engineering, construction materials testing and related professional services.

AMT is joined by **Triad Engineering, Inc.** to provide geotechnical engineering services. Triad offers the specialized expertise required for the project design recommendations to slope stability and erosion concerns. Triad also provides 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.

AMT's Project Manager, Don Rissmeyer, PE, CFM, has 27 years of exceptional experience managing design and construction of various dams from negligible to high hazard dams. Our design team has proven experience with the following services:

- Hydrologic/Hydraulic analysis using current SCS methodology and SITES program;
- Surveying including bathymetric;
- Planning and design for compliance with state and federal requirements;
- Design and rehabilitation of earth embankments and earth lined spillways (embankments, principal and emergency spillways, risers, seepage control, pond storage);
- NRCS Dam inspections and investigations;
- Environmental assessments and permitting; and,
- Slope stabilizations and site improvements.

Through our engineering expertise and outstanding project management as well as our commitment to your needs, AMT offers WVDA a proven, successful and available team for this project. We look forward to this opportunity to work as an extension of your staff on this project, and appreciate your consideration of our qualifications.

Sincerely,

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

Stuart Robinson, PE
Principal-in-Charge
srobinson@amtengineering.com

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Todd Lake Dam (UNR 10) – Augusta County, VA

I. Qualifications and Experience

TEAM INTRODUCTION

A. Morton Thomas and Associates, Inc. (AMT), an Engineering News Record Magazine Top 250 firm, has been providing civil engineering and dam safety services throughout the Mid-Atlantic Region for 60 years working from seven (7) offices. AMT is a privately-owned S-corporation with seven (7) Managing Principals employing over 500 engineers, biologists, ecologists, planners, surveyors, construction managers and inspectors and other support personnel. AMT has served and continues to serve numerous state and municipal agencies through 17 offices throughout the mid-Atlantic Region including Parkersburg, West Virginia.

AMT is committed to maintaining our reputation by teaming with our employees, clients and community to provide high quality, sustainable projects. AMT utilizes best management and construction engineering practices, scientific principles and design solutions, allowing the firm to deliver high quality, ecologically conscious and cost-effective projects on time and within budget.

Our available staff of engineers, environmental, planners, landscape architects, surveyors, and support personnel offer proven experience for water resources agencies and clients involving regulated dams providing: hydrologic and hydraulic (H/H) modeling, civil and structural engineering design, surveying and mapping, environmental studies and permitting, public bidding, construction administration, and construction inspection services. We offer the full depth of technical expertise and geographic coverage that is needed for this contract.

AMT specializes in turning planning recommendations into built improvements for our clients, and dam rehabilitation projects are no exception. Combining our diverse technical skills with a successful design, we can guarantee the provision of professional services that will meet the West Virginia Department of Natural Resources Wildlife Resources Section goals 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, Chief, Watershed Projects
Evaluation Branch, Fairfax County

Lake of the Woods Association

..LOWA has always believed in safe dams and good engineering, and Don Rissmeyer has assisted with both consistently since we began working together in 2006. We are happy to recommend his engineering services and the services of AMT to other dam owners.

— Bruce Kay, Lake of the Woods
Homeowners Association

Department of Game and 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 Lawnes, VCCC, DGIF
Director of Capital Programs

AMT Project Experience

As illustrated in the table below, which references the National Inventory of Dams (NID), AMT has provided similar services related to dam safety in recent years.

Project Name	Owner Name	Drainage Area	NID ID	NID Height (Ft.)	Length (Ft.)	Height (Ft.)
Briery Creek Lake Dam	Virginia Department of Game and Inland Fisheries (VDGIF)	24.8	VA14737	64	920	64
Brunswick County Dam	VDGIF	15.93	VA02501	25	620	25
Fluvanna Ruritan Dam	VDGIF	1.49	VA06502	43	790	43
Lower Powhatan Dam	VDGIF	N/A	VA14502	13	N/A	19
Upper Powhatan Dam	VDGIF	5	VA14501	25	380	25
Fawn Lake Dam	NTS Virginia Development Co.	4.14	VA17709	63	2400	63
Grant Lake Dam	Lake Wilderness Property Owners Association	0.62	VA17711	29.4	600	29.4
Lee Lake Dam	Lake Wilderness Property Owners Association	0.805	VA17710	19	450	19
Wilderness Dam	Lake Wilderness Property Owners Association	4.79	VA17707	28	650	28
Industrial Authority Dam, Care Creek	Danville-Pittsylvania County Regional Industrial Authority	31.4	VA14380	24	320	29
Keaton's Run	Lake of The Woods Association, Inc.	1.17	VA13708	38	350	38
Veterans Memorial Dam	Lake of The Woods Association, Inc.	7.2	VA13701	65.5	1475	65.5
Pohick Creek (PC) Dam #2 (Lake Barton)	Fairfax County	0.84	VA05923	39.1	698	39.1
PC Dam #3 (Woodglen Lake)	Fairfax County	1.15	VA05928	38	700	38
PC Dam #4 (Royal Lake)	Fairfax County	3.8	VA05922	42	1050	42
PC Dam #7 (Lake Braddock)	Fairfax County Board of Supervisors	0.63	VA05905	47	720	47
PC Dam #8 (Lake Huntsman)	Fairfax County Board of Supervisors	2.33	VA05907	45.4	700	45.4
South River Dam #8a (Jones Hollow)	City of Waynesboro	2.5	VA01528	25	380	25
Upper N. River Dam #10 (Todd Lake)	Headwaters Soil & Water Conservation District, Verona	4.1	VA01505	68	734	68
Brighton West Pond	City of Gaithersburg	3.06	MD00351	16	610	16
Wheaton Regional Park Dam	M-NCPPC Montgomery Parks	0.3	MD00041	24	733	24
Rocky Gorge Dam (Duckett Dam / Duckett Reservoir)	Washington Suburban Sanitary Commission	132	MD00020	139	840	139
Montgomery College (Germantown) Dam	Montgomery College	0.13	MD00331	21	400	21
Upper Rock Creek #5 (Lake Needwood)	M-NCPPC-Upper Rock Creek	12.8	MD00046	65	426	65
Montgomery College (Rockville) Dam	Montgomery College - Rockville Campus	0.20	MD00439	13.79	95	13.79

Subconsultants

Triad Engineering, Inc. (Triad) is an engineering firm with seven (7) office locations in West Virginia, Virginia, Pennsylvania, Ohio and Maryland providing services in the geotechnical engineering, construction inspection and testing, environmental assessments, laboratory testing, and related earth-science disciplines. This contract will be managed by Triad's dam experts.



The firm has provided services on thousands of projects of varying size and complexity since beginning operations in 1975. Triad has vast experience in dam and impoundment design, dam safety upgrades and other services for agencies including the NRCS and other various state and local governmental clients. Triad has provided geotechnical investigations and construction materials testing services for more than 50 dam related projects, in West Virginia and Virginia.

West Virginia

- 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 - Willow Island, 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
- Triad has worked on numerous dams for Consolidation Coal Company in 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

- 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
- Lawrence Dams - Loudoun County
- Loch Linden Dam - Warren County
- Long Pond - Clarke County
- McGhee Dam - Loudoun County
- Oliver Dam - Loudoun County
- Peaceful Valley Dam - Frederick County
- Sheppard Lake Dam - Frederick County
- Silver Lake - Frederick County
- Spring Lake, Shenandoah Farms - Warren County
- Sullivan Dam - Warren County
- Whippoorwill Dam, Washington County
- Zuckerman (Meadow Lake) Dam - Frederick County

Project Management

The role of project and financial management is to facilitate completion of project tasks on time and on budget, address emerging issues in a timely manner, and maintain open communications with the client. AMT will perform project and financial management under the direction of Don Rissmeyer, P.E., the Project Manager.

Mr. Rissmeyer will be the WVDA's primary point of contact. He will provide overall project and financial management, technical supervision of all phases of work, and implement AMT's QA/QC. AMT's focus on effective, proactive project and financial management benefits both the agency and AMT by maximizing AMT's staff utilization and recognizing potential issues before they become emergent, thus preventing delays to the project schedule. The following describes the steps that will be followed and managed carefully to assure the project's quality, timelines, and success:

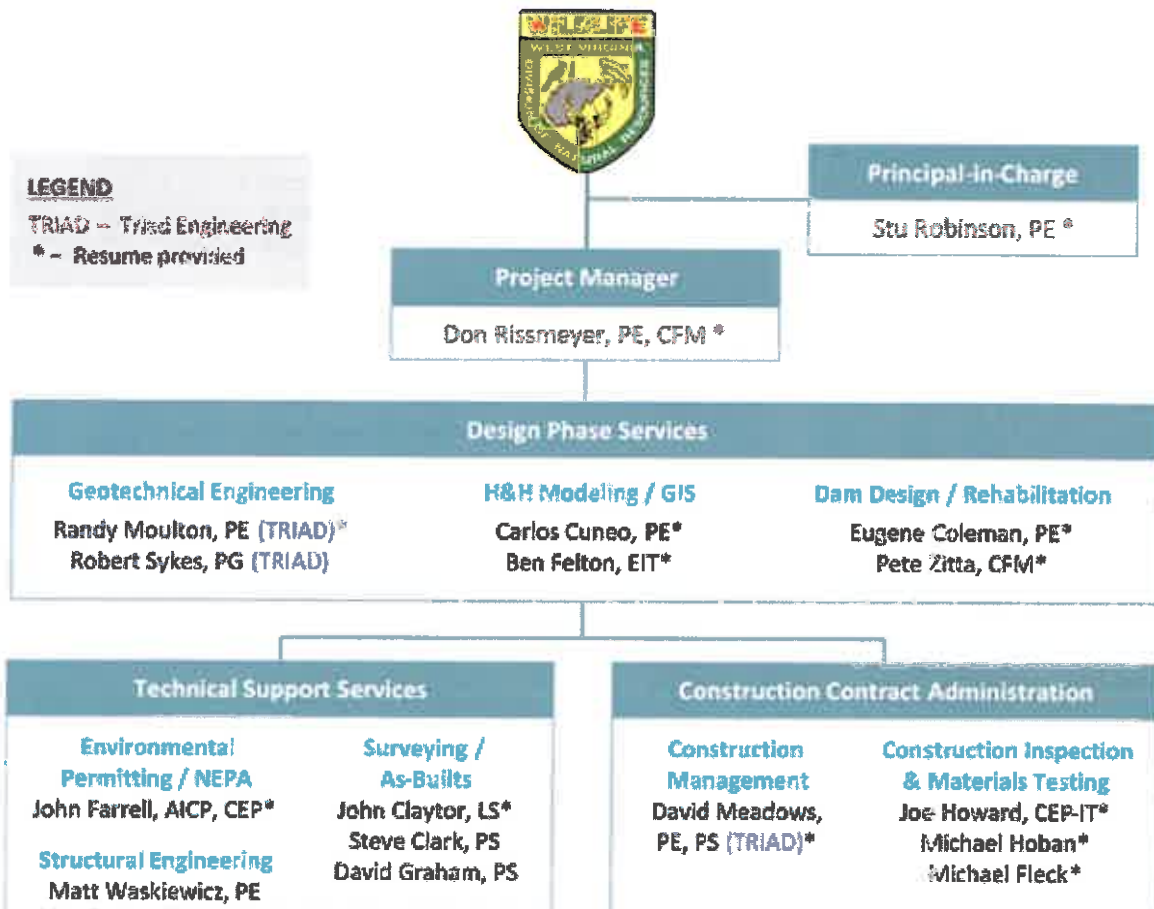
- Prepare a CPM project schedule and track milestones
- Prepare a matrix to track progress of permits
- Ensure the availability of resources for project staff

- Participate in bi-weekly progress meetings with the agency to discuss project status, performance, including schedule updates, budget and quality control
- Identify problems and correction actions
- Implement QA/QC program to ensure accuracy
- Prepare monthly status invoices with reports in accordance with agency guidelines
- Establish a multi-level electronic filing system for all documents (e.g. drawings, schedule, and reports) to facilitate easy access and review
- Establish a "partnering" approach with the agency, permitting agencies and project stakeholders
- Recognize emerging issues and conditions that may necessitate scope adjustments

AMT is well known for its ability to successfully manage projects from simple to complex. This is due, in part, to the full integration of our multi-disciplined practice.

Project Organizational Chart

We propose the following team organization plan to WVDA for this project.





Stuart Robinson, PE

PRINCIPAL-IN-CHARGE • QA/QC

Mr. Robinson has more than 33 years of experience in all aspects of water resources engineering for projects including dam inspections, evaluations and improvement plans, dam breach analyses, flood inundation mapping, hydrologic and hydraulic studies, watershed assessments, and floodplain modeling and studies, and QA/QC. Principal in charge of dam projects that included 13 high hazard dams throughout Virginia and Maryland and securing six (6) DCR Dam Alteration Permits in Virginia. He is familiar with the Federal, State and Local regulatory requirements regarding dam and stormwater facility construction including USDA Dam requirements. He is an approved Dam Safety Engineer-In-Charge (EIC) for regulated dams in the State of Maryland. He has obtained permitting for dam and downstream facilities which meet or surpass some of the most stringent regulatory requirements.

Role/Responsibility

Principal-in-Charge
Quality Control/Quality Assurance

Education

BS, 1978, Civil Engineering, Syracuse University

Registrations

Professional Engineer:
West Virginia, [REDACTED]

Years of Experience

Total: 38
With AMT: 24

REPRESENTATIVE PROJECTS

Dam Rehabilitation Projects, Fairfax County, VA: Principal-in-Charge for the rehabilitation of Woodglen Lake Dam and Royal Lake Dam rehabilitation projects involving the renovating and enlarging grass spillways and providing armoring of the Woodglen spillway using Articulated Blocks. Plans and specifications required review and approval by Fairfax County, Fairfax County Park Authority, the Natural Resources Conservation Service (NRCS), and DCR Dam Safety Division. Obtained the DCR Dam alteration and environmental permits.

Department of Game and Inland Fisheries (DGIF), Statewide, VA: Principal-in-Charge for providing statewide dam safety services and support to the Department of Game and Inland Fisheries (DGIF). Services including flood inundation studies, SDF determinations and hazard classifications, and dam rehabilitation designs including bid and construction phase support for Briery Creek Dam, Fluvanna Ruritan Lake Dam, and the Upper and Lower Powhatan Lake Dams.

Lake of the Woods Association, Orange County, VA: Principal-in-Charge numerous tasks involving three (3) high hazard dams. Projects included dam inspections, EAP table top exercises, CCTV inspections, and securing DCR dam alteration permits for three different construction projects. Construction projects have included foundation drain repairs (Veterans Memorial Dam) and the rehabilitation of the concrete spillways (Keaton's Run Dam and Veterans Memorial Dam).

T. Howard Duckett Dam - Inundation Study, Town of Laurel, MD: Principal-in-Charge for the hydrologic and hydraulic modeling to assess WSSC spillway operations and downstream breach impacts between Laurel and Bowie predominantly. Services included hydrologic modeling using GIS-Hydro and HEC-1 for the 367 square mile watershed and HEC-RAS modeling of the flood inundation zone for a 20-mile section of the Patuxent River, including existing bridges and major road crossings.

Martin Luther King (MLK) Dam, Montgomery County, MD: Provided a dam inspection of embankment, riser, and spillways and prepared inspection report. Prepared design documents for retrofit to the riser, repairs to principal spillway pipe, and installation of embankment filter diaphragm due to seepage. Permitting through MDE Dam Safety, MDNR, USACE for non-tidal wetlands, and MCSCD for Stormwater Management. As the Engineer-In-Charge, provided Construction Inspection with reports to MDE Dam Safety Division with final as-built certification.

Hunterswoods Quality/Quantity High Hazard Dam, Montgomery County, MD: Principal-in-Charge for an in-stream earthen pond dam retrofit to bring up to current standards with concrete riser, C-361 spillway pipe; concrete cradle; energy dissipater; replacement of embankment with core/cutoff and filter diaphragm; sediment forebay; and related landscaping. Dam breach and flood plain analysis to determine upstream/downstream impacts and dam classification (low hazard). Engineer-in-Charge (EIC) for MDE Dam Safety for construction inspections and final as-built certification.



Randy Moulton, PE

GEOTECHNICAL ENGINEER • TRIAD ENGINEERING

Mr. Moulton is a Principal Engineer for Triad Engineering, Inc., and in this capacity, he is responsible for corporate 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 proposals, review and/or preparation of subsurface exploration programs, evaluation of geotechnical data and review and preparation of detailed geotechnical reports. Mr. Moulton's 39 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 design of earth and earth-rock dams.

Role/Responsibility

Geotechnical Engineering
/ Design

Education

BS, 1976, Civil Engineering,
West Virginia University

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

Registrations

Professional Engineer:
West Virginia License
[REDACTED]

NCEES Record [REDACTED]

Years of Experience

Total: 39
With Triad: 39

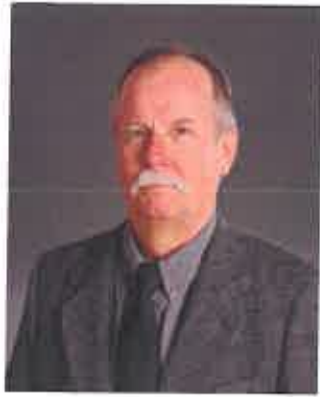
REPRESENTATIVE PROJECTS

Bluestone Dam, Hinton, WV: Project Engineer for the structure located within the City of Morgantown, less than a mile from where it empties into the Monongahela River. Hazard classification analyses were utilized to prove that the structure has a Class 2 Hazard Potential. As constructed, the dam was able to safely pass 35% of the PMP storm. However, risk analyses proved that 37% PMP will flood the downstream area with no failure of the dam. Therefore, the spillway needed to be enlarged to pass the 37% PMP storm. This resulted in the determination of a flood frequency that would be the basis for use in the project baseline risk assessment and risk evaluation for the dam safety modifications.

Cobun Creek Dam, Morgantown, WV: Project Engineer for the Cobun Creek Dam 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 and rock fill structure is approximately 57 feet in height and 268 feet long. The open-channel emergency spillway is constructed within the right abutment of the structure, with the channel excavated into bedrock. Filling of the undercut area with concrete is proposed, with reinforcement dowelled into the upper and lower rock units. Triad provided construction plans and specifications to complete the design effort. In addition, Triad has also provided safety inspection services and completion of the Certificate of Approval forms to satisfy WV DEP DS regulations.

Lakewood Dam, WV: Prime designer for a 72-foot high earth dam with a normal 60-foot water depth, creating a 43-acre reservoir for a lakefront residential community south of Cumberland, Maryland. Comprehensive services included surveying and aerial mapping, subsurface exploration, laboratory testing, hydrologic and hydraulic analyses, seepage analyses, stability evaluations and preparation of construction drawings and contract documents. Special considerations included a dam break analysis with routing of the flood wave downstream to evaluate impact on an existing railroad embankment. An innovative pond drain device, consisting of high strength HDPE pipe with a hydraulically actuated valve, eliminated the need for a typical reinforced concrete riser and reinforced concrete pressure pipe. A principal spillway weir and concrete lined channel were nested in an open emergency spillway channel excavated into hard bedrock. This combination resulted in appreciable construction cost savings for the Owners. Triad also provided construction monitoring, materials testing and contract administration during construction.

Lake Forest Estates Dam, Jefferson County, WV: Project Manager for evaluation of an existing non-regulated earth embankment located on private property being developed as a residential subdivision. The WV DEP issued an order to evaluate the structure and bring it into compliance with current safety standards incorporating 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 mechanism. TRIAD conducted field explorations, laboratory testing, engineering evaluations, and preparation of a design-development report, design plans, specifications, and filing of permits.



Robert Sykes, PG

SENIOR GEOLOGIST • TRIAD ENGINEERING

Mr. Sykes is currently a Senior Geologist for the Winchester, Virginia office of Triad Engineering, Inc. In this capacity, Mr. Sykes is responsible for technical and field management aspects of specific environmental and geotechnical projects in the region. This work includes coordination of drilling activities, monitoring of drilling activities including logging of soil and rock samples, landfill groundwater and gas monitoring design and implementation; preparation and submission of landfill monitoring reports; asbestos inspections and management plans; the planning and execution of subsurface and hydrogeological investigations, including fracture trace analysis and pump tests; drain field evaluations; and petroleum tank release characterizations, risk assessments, remedial design, and reimbursement of costs through the Virginia Petroleum Storage Tank fund (VPSTF).

Role/Responsibility

Geotechnical Engineering / Design

Education

Bachelor of Science, Geology

Registrations

Certified Professional Geologist (VA)

Authorized Onsite Soil Evaluator (AOSE) Virginia

Licensed Asbestos Management Planner (MD, VA, WV)

Licensed Asbestos Inspector (MD, VA, WV)

40-Hour Hazardous Materials Site Worker (OSHA 29 CFR Part 1910.120)

Years of Experience

Total: 37

REPRESENTATIVE PROJECTS

Town of Hillsboro, Hillsboro, VA: As Environmental Geologist/Project Manager, sampled groundwater monitoring wells and characterized groundwater at the old landfill site in Stanley, VA. Since 2006, Mr. Sykes has assisted Page County in reviewing laboratory analysis for waste acceptance.

Page County Sanitary Landfill, Stanley, VA: As Environmental Geologist/Project Manager, sampled groundwater monitoring wells and characterized groundwater at the old landfill site in Stanley, VA. Since 2006, Mr. Sykes has assisted Page County in reviewing laboratory analysis for waste acceptance.

Former Woolen Mill, Winchester, VA: As Project Geologist/Licensed Asbestos Inspector, performed a Phase II Environmental Site Assessment (ESA) to identify and investigate environmental concerns related to the project site. Also, performed a complete asbestos inspection and solicited bids from asbestos abatement contractors to remove asbestos containing materials prior to demolition of the building.

Resh Landfill Methane Gas Leak Analysis, Hagerstown, MD: Environmental Services Manager responsible for the scanning the surface of the landfill for methane gas prior to the installation of solar panels.

U.S. Silica Company Tonoloway Ridge Quarry, Washington County, MD: Project Geologist/Hydrogeologist responsible for performing a Hydrogeological Evaluation to obtain a water appropriation permit from the MDE. This evaluation included the construction of one test/production well and two monitoring wells; an approximate seven-hour, four stage step-test; and a 72-hour constant rate pump test.



Carlos Cuneo, PE

MAPPING AND MODELING

Mr. Cuneo has more than 18 years of experience with numerous projects involving dam rehabilitation studies and design as well as dam breach analysis and hazard classification, flood inundation mapping, hydrologic and hydraulic (H&H) modeling. Mr. Cuneo's dam project experience includes design of spillway modifications and earthen embankment protection to safely pass the PMP event, and to increase spillway capacity and reservoir storage capacity. Mr. Cuneo is knowledgeable in a range of programs and techniques including ArcMap, HMR 51/52, HEC-1, HEC-HMS, HEC-RAS, HEC-2, HMR52, HydroCAD, XP-SWMM, ICPR, InfoWorks RS, InfoWorks CS, and other software.

Role/Responsibility

Hydrologic & Hydraulic Modeling / GIS

Education

MS, 2009, Civil & Environmental Engineering, Virginia Polytechnic Institute and State University

BS, 1998, Civil Engineering, University of Maryland

Registrations

Professional Engineer:
VA License [REDACTED]

Rosgen Level I & II

Years of Experience

Total: 18
With AMT: 3

REPRESENTATIVE PROJECTS

Lake Manassas Dam Armoring Preliminary Engineering Report, City of Manassas, VA: Performed analyses for Rolled Compacted Concrete (RCC) armoring as overtopping protection for the earthen embankment during the PMP event. The RCC embankment was designed to be overtopped and act as an emergency spillway during the PMP event. The study included seismic refraction and geotechnical field investigations, stability analysis of the spillway and non-overflow sections, post-tensioning anchoring analyses, seepage analyses, preliminary drawings and cost estimates.

Lake Manassas Dam Spillway Modifications Study, City of Manassas, VA: Performed hydrologic and hydraulic analyses for five (5) spillway/embankment modification alternatives designed to increase the dam spillway capacity. Alternatives evaluated include increasing the spillway capacity with a hydraulically operated crest gate, several configurations for constructing an emergency spillway and chute section, and providing RCC overtopping protection of earthen embankment. Assisted in the designs and cost estimates for alternative spillway options. Produced flood inundation analysis and mapping of the impacted area resulting from a dam break and developed an emergency action plan for each dam modification alternative.

DGIF Upper Powhatan Lake Dam, Powhatan County, VA: Design engineer for the ongoing Preliminary Engineering Report to evaluate three (3) options for spillway/embankment modifications including raising the dam an estimated 4' in height, and doubling the width of the spillway. The study also includes a dam inspection and addressing deficiencies with the overall plan, for adherence to the available construction budget. Follow-up task order assignments will include surveying and engineering design, as well as the DCR Alteration Permit.

Storm Water Modeling- City of Ocala, FL: Technical lead for the design of drainage retention areas (DRA) for several drainage systems to provide water quality treatment and peak flow retention from new development. Project included design and modeling of BMPs, stormwater rerouting, and modeling of complex interconnected pond routing systems. Project performed using ICPR and XP-SWMM.

Post-Project Monitoring of BMPs to determine Performance and Whole-Life Costs, Water Environment Research Foundation (WERF): Assisted in the literature review and surveying of stormwater authorities and organizations in the US to identify the most commonly used BMPs and to gather and analyzed available of data on cost, performance and maintenance requirements.



Ben Felton, EIT

MAPPING AND MODELING

Mr. Felton has experience in water resources with projects involving flood inundation mapping, hydrologic and hydraulic modeling, dam breach analysis and hazard classification, dam inspections, and geographic information systems (GIS). Mr. Felton is knowledgeable in a range of programs and techniques, which include ArcGIS, HECGeo-RAS, GeoHEC-RAS, HEC-RAS, HEC-HMS, HydroCAD, and other software.

Mr. Felton is experienced leveraging geospatial data and current software to prepare, analyze and report for dam inundation studies. This experience extends to the development of detailed land use and soil survey break downs for estimating peak flows, conditioning and merging 3-dimensional ground surface data for increased accuracy, and utilization of imagery products to delineate key features in floodplain modelling.

Role/Responsibility

Hydrologic & Hydraulic Modeling / GIS

Education

MS, Civil Engineering,
University of Virginia, 2015

BS, Civil Engineering
University of South
Carolina, 2013

BA, Architecture,
Clemson University, 2009

Registrations

Engineer-in-Training

Years of Experience

Total: 4
With AMT: 1

REPRESENTATIVE PROJECTS

Fawn Lake Infrastructure Damage Assessment, Spotsylvania County, VA: Project Engineer for an infrastructure damage assessment study on the flood inundation zone for the Fawn Lake Dam. The dam is a high hazard structure that is subject to the Reduced SDF Permit requirements to carry insurance coverage for certain potential impacts of a dam failure.

Dam Analysis and Inspections- Lake Wilderness Property Owners Association, Inc.: Project Engineer for this new on-call contract just getting underway. Services include dam analysis, peer review services, routine dam inspections for high hazard dams and other engineering services in support of dam maintenance.

Holland Hills Dam Breach Study, Goochland County, VA: Project Engineer for providing technical and analytical support for the Project Engineer to complete a dam inundation and hazard classification study for a proposed retrofit to increase the dam height by one foot. Utilized HECGeo-RAS for the setup of input data to be exported for HEC-RAS analysis. Worked in tandem with project lead to calibrate model and parameters for the dam breach study. Use analysis output to create inundation map deliverables and plans for the dam retrofit.

Varrin Dam Breach Study, Loudon County, VA: Project Engineer for developing mapped deliverables from HEC-RAS output utilizing ArcGIS. Managed documents to ensure conformity to regulation standards and expectations for document deliverables.



Eugene Coleman, PE, LEED GA

CIVIL ENGINEERING

Mr. Coleman has 24 years of engineering experience with a wide array of projects. His project experience includes municipal facilities, dam rehabilitation, stormwater system and management design, as well as private projects including commercial and industrial site development. Many of these projects entail project due diligence, civil design, project permitting, construction budget estimating, and development of project bid documents and specifications. Mr. Coleman has also assisted with dam rehabilitation designs for several of our state and local government clients, in recent years. He is also a DEQ combined administrator for stormwater related services.

Role/Responsibility

Dam Design and Rehabilitation

Education

BS, Civil Engineering,
Virginia Polytechnic Institute and
State University

Registrations

Professional Engineer:
Virginia License
[REDACTED]

DEQ Stormwater Management
Combined Administrator

Years of Experience

Total: 24
With AMT: 4

REPRESENTATIVE PROJECTS

Upper Powhatan Dam (DGIF), Powhatan County, VA: Civil Engineer involved in the preparation of a preliminary engineering report with recommendations, followed by the surveying, environmental permitting and civil engineering design for a dam rehabilitation at both Upper and Lower Powhatan Dams with the DGIF. Construction was recently completed with low change orders.

Fluvanna Ruritan Dam Renovation, Fluvanna County, VA: This design is currently underway and 90% completed, including coordination of the surveying, environmental, and engineering design services for submittal to state agencies for design approvals (DEQ stormwater, DEQ erosion and sediment control, DCR dam alternation permit, and DGIF client review). The dam will be raised using vinyl sheet piles approximately four feet, and a PSW rehabilitation is planned, as well as a graded filter drain to address internal seepage issues in the embankment.

Countywide On-Call Engineering Services, Albemarle County, VA: Lead designer for the Cale Elementary School and Walnut Creek Park improvements, including the design of a new parking lot using bioretention facilities for stormwater management and the replacement of deficient concrete stairwells and walkways at the park. Mr. Coleman lead the surveying and engineering design for these facilities and assisted the county during the bidding and construction of both projects.

Shiloh Park, King George County, VA: Project Engineer for the design of a 33-acre county park, including bailfields, playground, entrance road improvements, parking lots, utilities, irrigation and stormwater management compliance. The design also includes a fitness loop trail and several primitive trails to the nearby YMCA in conserved open space. Mr. Coleman assisted the county during the design, permit approvals, bidding and construction of the first two phases of this county park development plan.

Citywide Stormwater Services, City of Waynesboro, VA: Civil Engineer for the design of two stormwater quality retrofits in accordance with the City's Potomac Highlands Implementation Grant. The Ridgeview Park project involved the design of bioretention treatment facilities in an improved parking lot. Mr. Coleman assisted the City of Waynesboro with the design, bidding and construction of this project in accordance with the grant funding requirements.



Pete Zitta, CFM

SENIOR ENGINEER

Mr. Zitta has 18 years of experience in water resources engineering including: earthen dams and spillways. Services include engineering designs and inspections, dam breach analysis and hazard classification, flood modeling, flood inundation mapping, and other hydrologic and hydraulic analysis. His projects have included field inspection of regulated dams; completion of dam inspection checklists and the design of remediation measures to bring existing facilities into compliance with current regulations.

REPRESENTATIVE PROJECTS

DGIF Upper Powhatan Lake Dam, Powhatan County, VA: Design engineer for the ongoing Preliminary Engineering Report to evaluate three (3) options for spillway/embankment modifications including raising the dam an estimated 4' in height, and doubling the width of the spillway. The study also includes a dam inspection and addressing deficiencies with the overall plan, for adherence to the available construction budget. Follow-up task order assignments will include surveying and engineering design, as well as the DCR Alteration Permit.

Woodglen Lake Dam Analysis, Fairfax County, VA: Lead Hydraulic modeler for the Sunny Day Dam Breach Analysis, floodplain analysis and H&H modeling for the enlarged spillway for the Woodglen Lake Dam Rehabilitation. Calculated Dam Breach Q maximum using NRCS TR-60 method; inundation areas were determined using a combination of Fairfax County LIDAR data which was used to cut stream channel cross sections in the GIS based HEC-GeoRAS program then imported into HEC-RAS model for analysis; computed results were then entered back into HEC-GeoRAS and ArcGIS was used for preparing a flood inundation maps.

Lake Barton Dam Breach Analysis, Fairfax County, VA: Lead Hydraulic modeler for the Sunny Day Dam Breach Analysis and Floodplain Analysis for the Lake Barton Dam in Fairfax County, VA. Conducted preliminary field investigation. Calculated Dam Breach Q maximum using NRCS TR-60 method; inundation areas were determined using a combination of Fairfax County LIDAR data which was used to cut stream channel cross sections in the GIS based HEC-GeoRAS program then imported into HEC-RAS model for analysis; computed results were then entered back into HEC-GeoRAS and ArcGIS was used for preparing a flood inundation map.

Lake Mercer Flood Inundation Zone Mapping, Fairfax County, VA: Project Engineer for the hydrologic and hydraulic modeling to determine and delineate the flood inundation mapping for Lake Mercer to the terminus of Pohick Creek at Pohick Bay (6 miles in length). Conducted preliminary site inspection of Lake Mercer Dam and performed GIS based HEC-GeoRAS modeling using County provided LIDAR and aerial image data to cut stream channel cross section lines for import into HEC-RAS model for hydraulic analysis.

Ellicott City Dam, Howard County, MD: Performed facility and embankment inspections and Hydrologic and Hydraulic (H&H) analysis in order to bring up pond to current MDE Dam Safety Division standards. H&H analysis included evaluating functionality of 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. Hydrology was performed using TR-20.

T. Howard Duckett Dam Inundation Study, Laurel, MD: Lead Hydraulic modeler to assess WSSC spillway operations and inundation areas for a 20-mile section of the Patuxent River. Releases at the Duckett Reservoir (Rocky Gorge Dam) and the Triadelphia Reservoir (Brighton Dam) were evaluated. Modeling included GISHydro 2000 to collect land use and soils data for Runoff Curve Number (RCN) generation, sub-watershed delineation, Times-of-Concentration and other input to a HEC-1 program for the 367-square mile watershed; 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.

Role/Responsibility

Dam Design and Rehabilitation

Education

BS / Civil Engineering /
University of Maryland

BA / Philosophy /
University of Maryland

Registrations

Certified Flood Plain
Manager (CFM): [REDACTED]

Years of Experience

Total: 18
With AMT: 18



John Farrell, AICP, CEP

ENVIRONMENTAL SERVICES MANAGER

Mr. Farrell has 19 years of experience in environmental planning, assessments, and design assignments for municipal and state agencies in Virginia. Expertise includes wetlands, streams, floodplains, forest conservation plans, passive recreation and related environmental services including planting plans for environmental restoration and mitigation. He also provides coordination and permitting through various State, Federal, and local agencies and has established relationships with many of these agency representatives to help steer projects through the permitting processes.

Role/Responsibility

Environmental Permitting

Education

BS, 1997, Urban Studies and Planning, Environmental Management, Virginia Commonwealth University

Registrations

American Institute of Certified Planners

Certified Environmental Planner

Years of Experience

Total: 19
With Triad: 11

REPRESENTATIVE PROJECTS

Pohick Dam 7 (Woodglen Lake Dam), Fairfax County, VA: Environmental Planner for the dam rehabilitation design and environmental permitting for the County. Environmental design included trail restoration in coordination with the FCPA, reforestation plans to mitigate forest impacts in the Resource Protection Area (RPA), wetland delineations and onsite wetland mitigation design.

Pohick Dam 4 (Royal Lake Dam), Fairfax County, VA: Environmental Planner for the dam rehabilitation and environmental permitting for the County. Environmental design included trail restoration and environmental services for designating the RPA, tree survey, tree removals plan and reforestation plans to mitigate the tree clearing. John also assisted with the design of the training dikes, ACB armoring, chute blocks and cut-off wall to include coordination with the civil and structural engineers throughout the design.

Briery Creek Dam Rehabilitation, Prince Edward County, VA: Environmental Planner for the development of a dam rehabilitation plan to address identified deficiencies during the PER study phase. This includes woody vegetation removals, trash racks on the PSW riser, a graded filter drain, and related work.

Keaton's Run Dam Rehabilitation, Orange County, VA: Environmental Planner for the spillway rehabilitation and environmental permitting. Plans and specifications required review and approval by the DCR Dam Safety Division. Environmental permits included WOUS studies. The design and permitting was completed in 2011, with construction completed by W.E. Bowman with no change orders in early 2012.

Veterans Memorial Dam Rehabilitation, Lake of the Woods Association, Orange County, VA: Environmental Planner for the development of dam rehabilitation plans and environmental permitting. Mr. Farrell provided wetland delineation and USACE coordination for the filing of Joint Permit Applications required for the modification of the existing dam and spillway, including the installation of a toe drain and filter drain. Mr. Farrell also developed the Stormwater Pollution and Prevention Plan for the general contractor under the VAR10 construction permit.

Upper Powhatan Lake Dam, Powhatan County, VA: Lead Environmental Planner for services related to dam rehabilitation for the 32-acre lake within the 4,462-acre Powhatan Wildlife Management Area. Services included Environmental Assessment wetland delineation, Corps confirmation, design assistance to minimize impacts and joint permit applications in accordance with 404 requirements, along with cultural resources coordination with the VA DHR.

Historic Potomac River Dams, Fairfax County, VA: Environmental Services Manager for the development of American Eel passages on the Potomac River as retrofits to existing dams. John evaluated dozens of alternatives for the passage of eels over historically designated dams # 4 and #5 within the C&O Canal National Park. This work involved close coordination with the U.S. Fish & Wildlife Service and National Park Service.



John Claytor, LS

SURVEY PROJECT MANAGER

Mr. Claytor has 34 years of progressive experience related to survey field, office, and management tasks. His experience includes aerial and field-run topographic surveys, GPS and conventional survey control networks, GPS-RTK surveys, hydrographic and bathymetric surveys, environmental surveys, construction stakeout, utility surveys, supplemental field surveys for aerial base mapping, merging of aerial and field survey data into a seamless CAD environment, and creating digital terrain models (DTM's) using AutoCAD, Carlson and Bentley software. Mr. Claytor is well versed in current technologies to produce efficient and cost effective surveys.

Role/Responsibility

Surveying / As-Builts

Education

Austin Community College
Coursework – Land Surveying
Technology

Registrations

Land Surveyor: Virginia
NC, MD, FL

Years of Experience

Total: 34
With AMT: 4

REPRESENTATIVE PROJECTS

DGIF Upper Powhatan Dam – Survey, Powhatan County, VA: Topographic survey of the existing earthen dam, including wetlands (WoUS designations) that were designated along the downstream toe of dam, as well as the emergency spillway, parking lot, access road and old mill ruins for the Upper Powhatan Lake fishing launch. Mr. Claytor also provided construction engineering and stakeout to the DGIF contractor for this project, Keith Barber Construction.

Keaton's Run Dam - Survey, Orange County, VA: Topographic and as-built surveying at Keaton's Run Dam including an as-built survey for the concrete spillway based on the original design plans. Survey was then used for the dam rehabilitation design.

Veteran's Memorial Dam - Survey, Orange County, VA: Topographic survey at Veteran's Memorial Dam including an as-built survey for the concrete spillway based on the original design plans. Survey was used for the dam rehabilitation design in 2013, and for construction stakeout in 2014. Currently, Mr. Claytor is surveying the adjacent clubhouse pool and fitness center, including the floodwall that is part of the dam O&M permit.

DGIF Fluvanna Ruritan Dam – Survey, Fluvanna County, VA: Topographic survey of the existing earthen dam, including wetlands (WoUS designations) that were designated onto the downstream dam face, as well as the emergency spillway, and access road to Fluvanna Ruritan Lake. A miss utility ticket was used by Mr. Claytor to locate nearby gas mains and 12-pair of telephone cabling that cross the dam embankment, as well as other physical features. The AMT design is now underway, as well as easement acquisition due to the property line running down the center of the emergency spillway for this dam.

DGIF Briery Creek Dam – Survey, Prince Edward County, VA: Topographic survey of the existing earthen dam, including adjacent wetlands (WoUS designations), causeways and an emergency spillway for the dam at Briery Creek Lake. The establishment of survey control was challenging due to the lack of RTK-GPS correction service availability, and to meet this challenge, Mr. Claytor set eight (8) static GPS stations and reduced the data to a usable level of accuracy. Mr. Claytor also provided construction engineering and stakeout to the DGIF contractor for this project.

WV Route 2 over Proctor Creek (WVDOT), Wetzel County, WV: Project Surveyor for the replacement of the 3-span, about 230 feet in length, bridge carrying WV 2 over Proctor Creek. The existing rural bridge is located along a curved horizontal alignment and carries two traffic lanes in each direction with a roadway width of approximately 50'. The survey and mapping included approximately 35 individual properties adjacent to the public right of way and coordination with WVDOH staff to apply information contained in archive mapping. AMT design services involve bridge deck and superstructure design, modification of existing abutments to joint-less abutments, roadway widening design plans and maintenance of traffic.



Steve Clark, PS

SURVEY SUPERVISOR • TRIAD ENGINEERING

Mr. Clark is currently the Survey Supervisor for the St. Albans office of Triad. In this capacity, he is responsible for the supervision of the survey crews, overseeing the field work through drafting to the finished product delivered to the client, meeting with clients, and performing field work on large and complex projects. Mr. Clark is experienced in underground surveying, construction layout, boundary and road work surveying, photogrammetric and topographic surveying. He has supervised and/or performed survey work on various types of work including both underground and surface mine surveying for coal mine facilities, site surveys and construction layout for landfill facilities, site surveys and right of way plans for WVDOH highway projects, and site surveys and construction layout for site development projects. Mr. Clark has been involved in survey projects in several states including West Virginia, Florida, Virginia, and Ohio. In his supervisory capacity, he is responsible for schedules, project budgets, and the overall coordination of all survey projects. He works with all levels of engineering staff, the overall project team, and the project owner to produce a quality work product which satisfies all project requirements.

Role/Responsibility

Surveying/As-builts

Registrations

Licensed Professional Surveyor:
WV & PA

Certified 40 Hr. HAZWOPER

Professional Affiliations

WV Society of Professional
Surveyors

National Society of Professional
Surveyors

Years of Experience

Total: 30

REPRESENTATIVE PROJECTS

WVDOT Highway Projects, Various Highway Engineering Consultants

Mr. Clark's expertise includes several WVDOH projects for various highway consulting engineering firms. He is responsible for the generation of site surveys and property boundary surveys to be used in highway planning and design. These surveys include locating all physical and topographic features, utility locations, storm drainage features, and property boundary lines. He has also supervised and performed construction layout on highway projects including bridge and structure layout. Some notable highway design projects include: Corridor D- Parkersburg, WV, I-64 Widening- Kanawha County, WV, Veterans Bridge- Clarksburg, WV, and Route 10 Upgrade- Logan County, WV, King Coal Highway- Mercer County, West Virginia. Notable construction layout projects include: Holden Bridge- Logan County, WV and Chelyan Bridge- Kanawha County, WV.

Retail Development, Construction Surveying

Mr. Clark's experience as a construction layout surveyor includes multiple site design and construction layout projects. Notable projects include the construction layout of the Nitro Market Place Retail Center in Nitro, WV, Southridge Retail Center, Charleston, WV, Devonshire Luxury Housing Site, Putman County WV, Ripley Hudson Housing Development, Jackson County, WV; Donnel Kinnard Memorial Cemetery, Dunbar WV; and, numerous retail restaurants. Retail stores include Walgreen's, Rite Aid, Wal-Mart, Lowes. Work on these projects included establishing horizontal and vertical control, staking out the buildings as per the instruction of the Project Superintendent, laying out drainage, sewage, paving and curbing with grades.



David Meadows, PE, PS

CHIEF TECHNICAL OFFICER • TRIAD ENGINEERING

Mr. Meadows brings over 40 years of leadership, design, construction and project management experience to Triad Engineering. Mr. Meadows joined Triad in 2013 to provide management to the southwest region which includes the southern West Virginia area and the Athens, Ohio office. Mr. Meadows has recently been named Triad's Chief Technical Officer. In this capacity, he helps with technical expertise, quality and risk management, operations management, leadership and business development.

Prior to coming to Triad, he served in a number of technical and leadership positions at the US Army Corps of Engineers, Huntington District. His expertise includes civil design, geotechnical engineering, construction management, surveying, environmental remediation and water resources engineering.

Role/Responsibility

Construction Management

Education

M.S., Civil Engineering (Geotechnical), 1981, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

M.S., Civil Engineering, 1987, West Virginia College of Graduate Studies, Charleston, WV

B.S., Civil Engineering, 1974, West Virginia Institute of Technology, Montgomery, WV, Graduated Cum Laude.

Registrations

Registered Professional Engineer- WV

Registered Professional Surveyor- WV

Years of Experience

Total: 40

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 design projects; construction monitoring and testing operations; geotechnical investigation projects; and soils and concrete laboratory work in the region.

US Army Corps of Engineers, Huntington, WV

Chief H&H and Technical Support Division, Great Lakes and Ohio River Dam Safety Production Center and Dam Safety Modification Mandatory Center of Expertise.

Mr. Meadows was 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. He primarily accomplished this mission through twelve senior technical staff (Hydraulic, Cost and Construction Engineers) who oversaw all complex technical aspects of modification work. He directed their work and provided them with strategic leadership, mentoring, coaching, counseling, team building, partnering, direction and management.

Chief, Engineering and Construction Division.

Mr. Meadows was responsible to the District Commander for the Engineering and Construction functions associated with creating synergy between water resource development and the environment as it pertained to the Civil Works Program; responded to local, national, and global disasters; and provided full spectrum engineering and construction support to a geographic area comprising 45,000-square-miles. The district infrastructure includes 35 major flood control dams, nine locks and dam, and 29 major local flood protection projects. He provided technical, management, and strategic advice on engineering and construction matters. He directed a diverse staff of 215 team members engaged in all of the district's engineering design, construction, dam safety, levee safety, water management, flood damage reduction, navigation, flood proofing, and environmental enhancement, restoration and rehabilitation projects.



Joe Howard, CEP-IT

ENVIRONMENTAL SCIENTIST

Mr. Howard has 10 years of construction engineering and inspection experience, including dam inspections, erosion and sediment control (ESC) inspections, stormwater management (SWM) inspections, 401/404 permit compliance, stream assessments, and hazardous materials abatement related work. He regularly provides technical and field expertise on environmental and regulatory compliance issues. Mr. Howard operates throughout the region as an environmental resource for AMT clients, and offers a “boots in the field” approach to regulatory compliance, with a wide range of field experience to offer.

Role/Responsibility

Construction Inspection & Materials Testing

Education

BS, 2010, Biology, Hampden Sydney College

Registrations

VA DEQ Dual Combined Administrator

DEQ Stormwater Management Plan Reviewer, Inspector, and Program Administrator

DEQ Erosion and Sediment Control Plan Reviewer, Inspector, and Administrator

Certified Environmental Professional-in-Training (CEP-IT)

FEMA Debris Removal Operations
40-Hour EPA/OSHA HAZWOPER Training

Years of Experience

Total: 10
With AMT: 6

REPRESENTATIVE PROJECTS

Upper North River 10 (Todd Lake Dam), Augusta County, VA: Mr. Howard provided an environmental inspection and helped lead a progress meeting in support of AMT’s construction project manager, Don Rissmeyer, for this county project. He also consulted with Mr. Rissmeyer on environmental compliance issues involving field approaches to E&S measures throughout construction, as well as the Stormwater Pollution and Prevention Plan.

Upper and Lower Powhatan Lake Dams, Powhatan County, VA: Construction engineering support for the Upper and Lower Powhatan Lake Dams. Mr. Howard assisted with environmental studies and permitting for the project, including the Stormwater Pollution and Prevention Plan (SWPPP) and the VAR10 General Permit for Construction Related Activities, in association with the DEQ reviews for stormwater and E&S measures.

Citywide Stormwater Engineering Services, City of Harrisonburg, VA: Mr. Howard has been involved in several task orders for the City of Harrisonburg including the citywide stormwater master planning, the US-33 stormwater improvements (regenerative stormwater conveyance channel, dry swale and bioretention) and the Mountain View Drive stream evaluation. Continued work on the field assessment of proposed BMP sites for the citywide master plan is just getting underway, working closely with the public works department.

VSMP Plan Reviewer, Rockbridge County, VA: Mr. Howard is assisting the county Program Administrator, with third party plan review services, as an extension of county staff. He reviews all aspects of the local developer and engineer plans for stormwater management and erosion and sediment control compliance with the county’s VSMP program. Four reviews have been completed, including the Devil’s Backbone brewery in recent months.

Erosion and Sediment Control Program Administrator, Plan Reviewer and Site Inspector, Washington County ESC/SWM Program, Washington County, VA: Mr. Howard has assisted the county Program Administrator, with third party plan review services and site inspections for many years in Washington County, as an extension of county staff. He reviews and approves erosion and sediment control plans for regulated land-disturbing activities, monitors land-disturbing activities during construction, and ensures project compliance in accordance with both the Erosion and Sediment Control and Stormwater Ordinances, as well as state regulations and DEQ requirements. He works with the contractors and site owners and, when necessary, helps take enforcement action for Washington County.

Role/Responsibility

Construction Inspection & Materials Testing

Education

Associate of Science Civil Engineering Technology Fairmont State College

Certifications

- WVDOH Compaction Inspector
- WVDOH Aggregate Sampler
- WVDOH Portland Concrete Inspector
- Toxler Electronic Laboratories - Radiation Safety
- Safe Land USA - 8 Hr. PEC – Safety

Years of Experience

Total: 27

Role/Responsibility

Construction Inspection & Materials Testing

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

Years of Experience

Total: 19

Michael L. Hoban

ENGINEERING TECHNICIAN II • TRIAD ENGINEERING

Mr. Hoban is a returning Triad employee and brings over 27 years' experience. After beginning his career at WVDOH as a Rodman, Chainman, and calculated and recorded pay quantities, he went to Fairmont State College to attain his AS Degree in Civil Engineering Technology. He brings a wealth of experiences in construction inspection to the job site and laboratory.

WV Department of Highways: For two years Mr. Hoban provided construction inspection, concrete, soil, and asphalt compaction testing at the newly construction I-68 Welcome Center in Preston County, WV. Chester Boss Construction contracted with Triad for Mr. Hoban to perform field and laboratory concrete testing and lab aggregate testing on US 33 in Elkins, WV. Mr. Hoban provided QC/QA services for the Chesapeake Energy Paving project. Mr. Hoban performed QC testing on 10-mile project of Corridor H in Tucker County, WV.

Construction Testing and Inspection: Mr. Hoban performed inspection services for the Consol Northern WV Water Pipeline. Performed caisson observation and recording for a variety of conveyance systems and building foundations. Grout sampling and concrete testing for the Harrison Power Station Scrubber System. Mr. Hoban performed soil, concrete and asphalt testing for projects at Camp Dawson in Preston County, WV. Performed testing and inspection for various projects at the Mt. Storm Power Station. Testing and inspection for the Wisp Adventure Sports System International in Deep Creek Lake, Maryland. Mr. Hoban provided inspection for the Industrial School Classroom and Cellblock construction and road improvement project. Performed inspection and testing for new building construction at the Morgantown Airport.

Michael Fleck

ENGINEERING TECHNICIAN • TRIAD ENGINEERING

Mr. Fleck is currently a Senior Engineering Technician at the Southwestern Region of Triad. Mr. Fleck 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/bridge 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:

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

Royal Lake Dam Modifications and Repairs

FAIRFAX COUNTY, VA



Client

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

Contact

Dipmani Kumar, (703) 324-4612
Dipmani.Kumar@fairfaxcounty.gov

Design Fee

\$210,000

Construction Cost

\$1.4 M

Schedule

Design: 2008-2009
Construction: 2009-2010

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 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 a 2010 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.

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

AUGUSTA COUNTY, VA



Client

Augusta County

Contact

Doug Wolf, PE
(540) 245-5700
wolfe@co.augusta.va.us

Design Fee

\$185,000

Construction Cost

\$3 M

Schedule

Design: 2016
Construction: 2017

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 dam. Don Rissmeyer served as the Construction Project Manager for Augusta County, as an extension of the county 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 on-site, and issued two (2) bid addenda, resulting in a successful bid opening with the low bidder (Howdysshell 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.

Two (2) pre-construction meetings were held with Howdysshell Excavating for overall coordination and to provide an orientation to the temporary EAP (signed by the EMS coordinator). Monthly progress meetings were held onsite and all submittals including the ACB submittal (ACF Environmental) 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.

Woodglen Lake Dam Modifications and Repairs

FAIRFAX COUNTY, VA



Client

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

Contact

Dipmani Kumar
(703) 324-4612
Dipmani.Kumar@fairfaxcounty.gov

Design Fee

\$275,000

Construction Cost

\$1.1 M

Schedule

Design: 2009-2010
Construction: 2010-2011

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.

Briery Creek Dam Modifications and Repairs

PRINCE EDWARD COUNTY, VA



Client

Virginia Department of Game and Inland Fisheries (DGIF)

Contact

Phil Lownes, VCCO
 (804) 367-1253
 Phil.Lownes@dgif.virginia.gov

Design Fee

\$36,580

Construction Cost

\$98,000

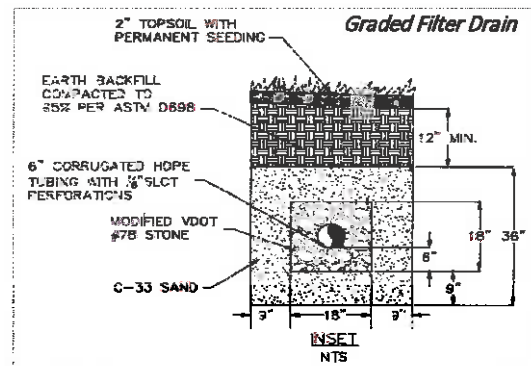
Schedule

Design: 2014-2015
 Construction: 2015

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 Briery Creek Dam.

This project began with a Preliminary Engineering Report (PER) to evaluate 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.

AMT also conducted supplemental surveying within the planned limits of construction, and secured a jurisdictional determination and Nationwide Permit 3 from the Corps, 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.

It also includes a graded filter drain along the downstream toe of dam, where an adjacent wetland is 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 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.

Upper Powhatan Lake Dam Modifications and Repairs

POWHATAN COUNTY, VA



Client

Virginia Department of Game and Inland Fisheries (VDGIF)

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.

Contact

Phil Lownes, VCCO
(804) 367-1253
Email:
Phil.Lownes@dgif.virginia.gov

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.

Design Fee

\$86,923

Construction Cost

\$676,020

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.

Schedule

Design: Spring 2016
Construction: August 2016 -
Current

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 completion.

Todd Lake Dam Modifications and Repairs

AUGUSTA COUNTY, VA



Client

Augusta County, Virginia

Contact

Doug Wolfe, PE
(540) 245-5600
dwolfe@co.augusta.va.us

Design Fee

\$70,000
(Construction Manager)

Construction Cost

\$3 M

Schedule

Design: not applicable
Construction: 2015-2016

Through a countywide term contract for civil engineering, AMT was recently issued a task order to provide bid and construction management services for Augusta County on the dam rehabilitation project for Todd Lake Dam (Upper North River Dam No. 10). Don Rissmeyer served as the construction project manager for Augusta County, as an extension of the county 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, in order 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 on-site, and issued two (2) bid addenda, resulting in a successful bid opening with the low bidder (Howdysshell Excavating) at \$3.0M which was below engineer's estimate (\$3.6M).

AMT also assisted in coordinating the acquisition of the DCR Alteration Permit, Corps Nationwide Permit 3, U.S. Forest Services permits for timber removal and forest road use (George Washington National Forest), and worked with the contractor on the Stormwater Pollution Prevention Plan (SWPPP) submittal in advance of securing an Augusta County Land Disturbance Permit.

Two (2) pre-construction meetings were held with Howdysshell Excavating for overall coordination and to provide an orientation to the temporary Emergency Action Plan (signed by the EMS coordinator). Monthly progress meetings were held onsite and all submittals including the ACB submittal (ACF Environmental) 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.

Keaton's Run Dam Modifications and Repairs

LAKE OF THE WOODS ASSOCIATION, ORANGE COUNTY, VA



Client

Lake of the Woods Association, Inc.
102 Lakeview Parkway, Locust Grove,
VA 22508

Contact

Jessie Graves, Director of Facilities
(540) 972-2254; jgraves@lowa.org

Design Fee

\$32,000

Construction Cost

\$122,393

Schedule

Design: 2011

Construction: 2012

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).

Veteran's Memorial Dam Modifications and Repairs

LAKE OF THE WOODS ASSOCIATION, ORANGE COUNTY, VA



Client

Lake of the Woods Association,
Inc.
102 Lakeview Parkway
Locust Grove, VA 22508

Contact

Jessie Graves, Director of
Facilities
(540) 972-2254
jgraves@lowa.org

Project Cost

Design: \$42,500
Construction: \$295,000

Schedule

Design: 2013-2014
Construction: Nov 2014

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).

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.



Elkwater Fork Watershed Dam Rehabilitation

HUTTONSVILLE, WV

The project consists of the construction of a \$32 million water supply dam across Elkwater Fork, near Huttonsville, West Virginia. The dam construction consists primarily of roller compacted concrete (RCC) with pre-cast concrete panels placed along the upstream and downstream faces. The watershed area for this dam is over 5,000 acres. Triad provided engineering support to the contractor and is currently providing full time quality control services.

Engineering support services provided by Triad consisted of preparation of construction erosion and sediment control plans for the project site as well as over one (1) mile of access road, air pollution permit application for the conventional concrete and RCC batch plants, full design of a ground water de-watering system, and full design of a surface water diversion system including earthen coffer dam.

Quality control services for the project consist of full quality control management and testing of all construction materials including fill placement, conventional concrete materials, and roller compacted concrete materials. Triad built and furnished a fully equipped laboratory for the project and is currently staffing the project with a Quality Control Manager, RCC Engineer and four (4) Quality Control Technicians.



II. Approach and Methodology

PROJECT UNDERSTANDING

The West Virginia Department of Agriculture (WVDA) seeks a qualified engineering firm to provide architectural/engineering services to design and specify modification or repairs for two projects the Cedar Lake Dam (Project A) to bring into compliance with Dam Safety Regulations and the Food Distribution warehouse (Project B) to provide slope stabilization at a slip area to protect the building foundation.

Project A: Cedar Lakes Dam

The project locations include the following:

- Cedar Lake Dam No. 1 (WVDEP ID No. 03501) located at Cedar Lakes Camp and Conference Center near Ripley in Jackson County WV.
- Cedar Lake Dam No. 2 (WVDEP ID No. 03502) located at the Cedar Lakes Camp and Conference Center near Ripley in Jackson County WV.
- Both dams are under the jurisdiction of the WV Dam Control and Safety Act (WV State Code 22-14) and Dam Safety Rule (47CSR34).

Cedar Lake Dam No. 1: The dam is comprised of earth construction with a concrete weir outlet controlling the water which drain into a concrete channel spillway with energy dissipation at the bottom of the spillway. The water then drains into a channel, through a corrugated metal pipe under an access road and ultimately into Mill Creek approximately 400 feet downstream of the principal spillway. The FEMA Map Number for Mill Creek is 54035C0241F.



Cedar Lake Dam No. 1 Control Structure

The earthen dam is approximately 32 feet high and 550 feet long with a maximum storage capacity of 40 acre-feet. Cedar Lake Dam No. 2 drains into Cedar Lake Dam No. 1.



Cedar Lake Dam No. 1

Cedar Lake Dam No. 2: The dam is comprised of earth construction with riprap lined channel spillway. The original spillway failed and was replaced with the current one. There currently is a principal spillway with riser and trash sunken into the embankment. A small vertical MH with looks like a perforated pipe is out-letting from the riser into the lined channel spillway. An access temporary walkway bridge spans the channel spillway.



Cedar Lake Dam No. 2 Riser

The earthen dam is approximately 32 feet high with a length of 230 feet with a maximum storage capacity of 32 acre-feet.



Cedar Lake Dam No. 2 Spillway

Project B: Food Distribution Warehouse

The WVDA Food Distribution warehouse is located on Cedar Lakes Drive near Ripley in Jackson County, WV.

The food distribution warehouse is experiencing a 30 by 60-foot area of sloughing (slip) of the existing slope near the foundation of the warehouse. At first glance, there does not seem to be any structural damage. There is noticeable slope slippage from the side of the warehouse with a visual undercutting near the side access to the warehouse. Slippage is also noticed due to the bowing of the existing chain link fence and soil eroded areas.



WVDA Warehouse Slope Slippage

Project Goals and Objectives

Goal/Objective 1. (Projects A & B): Preparation of construction contract drawings and specifications suitable for letting of construction bids with the RFQ and bidding process. All applicable permit applications, right-of-ways, realty appraisal work, if needed, off of permit boundaries, right-of-entries, and approvals are also part of the work to be performed.

Goal/Objective 2. (Project A): Evaluate the dams for compliance with WV Dam Control and Safety Act, Dam

Safety Rule, and the West Virginia Department of Department of Environmental Protection (WVDEP) Compliance Order to develop a plan for compliance and facilitate the project.

Goal/Objective 3. (Project A): Perform evaluation of current dam site including inspection history, hydrologic analysis of the potential failure, and geotechnical analysis in-order to identify and recommend solutions for channel restoration, principle spillways design and replacement, riser repairs, auxiliary spillway repair, outlet repair, and other dam maintenance and repair needs.

Goal/Objective 4. (Project A): Develop alternative strategies for dam repair, modification, or decommissioning including assessment on the impact of alternatives on adjacent dam structure (Dam No. 1).

Goal/Objective 5 (Project A): Based on needs and alternatives described in Objective #1, prepare appropriate cost estimates, plans, site drawings, and related specifications for all alternatives including repair, modification, or decommissioning, in order for dam site to attain and continue compliance with WVDEP regulations.

Goal/Objective 6. (Project B): Evaluate the Food Distribution warehouse site and perform appropriate soil analysis to determine cause of slip so a permanent solution can be designed which may involve the excavation of area, stabilization, overhead water diversion.

Goal/Objective 7. (Project B): Secure engineering assistance to evaluate site, develop alternatives, design a solution and assist with implementation. Identify the problem with the slip and install a permanent repair to reduce potential hazards to warehouse facility.

Goal/Objective 8. (Projects A & B): Develop comprehensive construction plans and bid specifications for alternative chosen by agency. Design a solution for contracting, and assist in applications and permits.

Goal/Objective 9. (Projects A & B): Provide all necessary services to design the project in a manner that is consistent with the Division of Natural Resources needs, objectives, current code, and budget and that complements the design and layout of the associated areas.

Goal/Objective 10. (Projects A & B): Prepare bidding packages in accordance with the procedures of the West Virginia Purchasing Division of the Administration Section.

Goal/Objective 11. (Projects A & B): Provide construction contract administration services that ensure that each task

is constructed and functions as designed.

Project Timeline

In the anticipation of the WVDA to have the projects completed by August of 2018.

APPROACH AND METHODOLOGY

The following approach and methodology to achieve the goals and objectives for each of the dam sites and the warehouse.

Project Kickoff and NTP

Following receipt of notice-to-proceed (NTP), AMT will schedule a kickoff meeting with the WVDA. The meeting will be attended by the Project Manager, Don Rissmeyer and key design staff. Project goals, schedule, operations, agency concerns, and objectives will be discussed for each dam and the agency's Food Distribution Program warehouse. A scope of work will be developed for each project for review and approval from WVDA.

Review of Existing Information and Data

AMT will obtain and review previously prepared documents, such as the following:

- Maintenance reports, including coordination with the WVDA as to the condition of the dams;
- Previous engineering assessment
- Previous inspection reports
- Current operational certificates and related file information; and
- As-Built drawings and design information for each dam (w/ stage-storage-discharge relationships).
- Dam/site operations

AMT will also research the availability of the following documents to use previously developed information to assist in developing the current dam capacity, release rates, dam water surface elevations, dam breach, and flood inundation areas.

- Other previous hydrologic and hydraulic evaluations or engineering models; dam breach analysis
- Roadway and bridge plans for downstream structures in the flood inundation zone;
- GIS quality topographic maps for the Watersheds and Flood Inundation Zones;
- Other GIS data (land use, property ownership, roads, utilities, etc.);
- FEMA data including FIRM maps and flood studies;

- Sediment or bathymetric surveys / stream surveys.

Field Investigation

Upon review of available data, AMT will prepare preliminary base mapping using GIS information provided by WVDA and then visit the sites to evaluate conditions at the dam site, in the upstream watershed, at the dam, and in the flood inundation zone below the dam.

Upstream watershed characteristics will be investigated using a technique called a 'windshield tour'. With maps in hand, we will drive accessible portions of the watershed verifying topographic high points and watershed features including land use patterns and overall topography. Downstream hydrology will also be investigated within the area considered for lateral inflows by this method of field review. Field visits can also help verify the engineering model results where survey information, high water observations, channel roughness values, debris factors, and other observations affecting the modeling parameters and results being developed can be made.

Dam Inspections

AMT will review past inspections, engineering assessments and recommendations for each of the dams. Field investigations of each dam site will be conducted to assess the current condition of the dams and the preliminary recommendations for improvements, rehabilitation, and/or additional concerns that would require evaluation in our designs.

Required site investigations will be performed on the embankments, control structures, principal spillways, auxiliary spillway, and downstream outfalls, which include:

- Woody vegetation and trees along/on the embankments
- Riser/spillway blockage
- Slope erosion, animal burrows, stability
- Seepage, sloughing, depressions, and/or settlement
- Soft spots, wave erosion
- Riser cracks, spauling, control openings, debris or obstructions, corrosion, joint displacements, trash racks, drains
- Principal spillway pipe seepage, joint displacement, settlement, undercutting, corrosion
- Emergency spillway erosion or back cutting, seepage, sloughing, cracking, spauling, displacements
- Rock impoundment conditions/seepage
- Outfalls blockage, erosion

Other observed conditions will be photographed and documented with field sketches, measurements, and notes for the assessment of each dam.

Schematics

Based upon the early identification of issues with WVDA and the WVDEP Dam Safety Section, AMT will work with WVDA to define the goals of the project and develop a concept for the dam improvements. This will also serve as information to be presented and discussed with the review agencies and for use in any public information meetings. Schematics may include the following:

- New or revised maintenance plans for approval.
- Repairs of potholes, deteriorated pavements, and disturbed areas.
- Cutting and clearing woody vegetation and trees from embankments to existing ground levels within 25 feet of the toe of dams.
- Clearing outfall areas from obstructions and erosion for proper flow conveyance.
- Remove debris and trash from around riser and spillways.
- Repair/replace deteriorated or misaligned pipes.
- Prepare Monitoring and Emergency Action Plans (EAP's).
- Concepts to install/update riser trash racks.
- Concepts plans for any modifications required.
- Concepts for monitoring of animal activities and repairing/filling animal burrows.
- Concepts for monitoring the embankment slopes for seepage, instability, slides, erosion, and wave erosion.
- Concepts for keeping the dams in good mowing condition.
- Inform WVDEP-DS of any sign of possibly failures.

Geotechnical Engineering

One of the first steps in designs/remediation analyses for the dams is to complete a geotechnical investigation on the dams. Working with our subconsultant, Triad Engineering, Inc. (TRIAD), AMT will plan and supervise the field exploration within the different zones of the existing embankment, for a determination of slope stability and zone compatibility, seepage, along with design recommendations in a geotechnical report. Services can include borings, soil classification, rock classification using RQD testing, and recommendations related to earthwork and slope stability, seepage, foundation drainage systems within the dam, dewatering needs, foundation stability,

rock excavation and profiles, erosion control and stabilization methods for flood flows, and related work.

The four steps to these geotechnical engineering services while also minimizing impacts to the operation of the facility include:

Step 1: Preparation and submittal of a geotechnical investigation plan that includes the scope and extent of the planned investigation, equipment and materials to be used, methods of exploration, field testing and documentation, and a schedule for the work. The plan will also provide the names and qualifications of the personnel involved in the management, field work including drilling, field data reports, and associated chain of custody to collect samples, including a professional geologist on site during the field exploration and supervision by a licensed professional engineer. Drilling methods may include 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 with the WVDA and all members of the geotechnical investigation team to review the approved geotechnical investigation plan, and the intended results.

Step 3: The laboratory testing will be completed along with field testing with accurate records to be provided by the Geotechnical Engineer.

Step 4: The geotechnical report will be prepared, signed and sealed by an on-staff West Virginia Licensed Professional Engineer or the on-staff investigating professional geologist both of whom will work closely together throughout the projects. The report will include laboratory results, embankment slope stability, seepage control, summary of results and recommendations for improvements and/or rehabilitation.



WVDA Warehouse Slope Slippage

TRIAD can also provide construction inspections and materials testing including addressing dewatering issues, removal of unsuitable soils, rock excavation and related matters. These types of issues commonly occur at our dam sites, and they require close coordination between AMT and Triad and sometimes result in innovative solutions that allow project construction to continue without delay.

Surveying

Upon completion of the initial field investigations, AMT will work with WVDA to determine the extent of surveying required for the dams. Services may include the following:

- Survey control at designated locations, using RTK GPS points tied into established benchmarks;
- Dam profiles from natural ground to natural ground across the top / toe of dam;
- Emergency spillway profiles from water surface to discharge point or the nearest confluence downstream;
- Dam cross-sections at the widest point in the dam, from water surface to toe of dam;
- Inverts of outlet pipes, foundation drains, and other structures encountered;
- Boring locations;
- Wetland flagging;
- Trees/tree line limits;
- Mine openings;
- Landslides;
- Cross-sections at downstream road crossings:
 - 100-ft downstream;
 - Toe of slope upstream and downstream of roadways;
 - High side or centerline profile of traveled surface;
 - Surveying and sketches of downstream bridges and structures.
- High water marks or features;
- Bathymetric surveys;
- Lowest ground elevation at existing structures within flood inundation zones; and,
- Establishment of benchmarks / staff gages at the dam site.

In addition, site sketches, field notes, photographs, record drawings, benchmark data, and other survey information will be assembled into a survey data notebook for documentation. Topographic drawings will be prepared for each dam site from surveyed data with GIS data being used for outside the limits of surveys.

Hydrologic Analysis

HEC-HMS will be used to prepare and/or verify hydrologic models for the tributary watershed at each dam to include lateral inflows downstream within the flood inundation zone to the point of convergence. HEC-HMS is a good choice because it is capable of simulating precipitation-runoff relationships for natural, dendritic watersheds, it supports the Natural Resource Conservation Service (NRCS) hydrologic methods as found in the NRCS TR-55 Manual (USDA, 1986), and it can be used to generate the dam breach discharge hydrograph. Discharges generated will be routed through existing outlet structures at each dam to evaluate non-breach discharges and the associated water surface elevations within each impoundment.

Spillway capacity and the ability to handle the designated Spillway Design Flood (SDF) at each dam will be evaluated as part of the hazard classification. Land use plans for the locality will be used to augment existing conditions and help establish watershed characteristics in the model, and model sensitivity to changing land use conditions, lag time, storage affects, and other important factors will be considered in establishing realistic peak discharges at each dam site. Precipitation data will be based upon using the storm durations, as mandated in WVDEP Dam Safety Rule 47CSR34.

HEC-HMS will also be used to determine the peak discharges related to watershed hydrology and flood inundation mapping below the dam, up to a point of 1' convergence on the flood inundation zone.

Other computer models available include XPSWMM, Win TR-55, Win TR-20, SITES, and Hydro CADD.

Dam Hazard Classification

The hydrologic and hydraulic modeling described above will be used to verify and/or determine the final hazard dam classifications Class I, II, III or IV, (high hazard, significant hazard, low hazard and negligible hazard), respectively, in accordance with Dam Safety Rule (47CSR34) requirements. The dam Hazard Classifications will be verified during the design process for Certificate of Approval(s). The dam hazard classification in the current regulations is defined based on the hazard potential of each dam. Storm events will vary depending upon the classification of the dam.

Dam Breach Analysis

With initial hydrology established using HEC-HMS, breach model parameters (e.g. failure time) will be added to determine the breach discharges for downstream routing and mapping. The dam break analysis is an event that occurs unexpectedly, oftentimes due to problems related to dam maintenance and risk of failure. An overtopping failure is modeled if the auxiliary spillway (if applicable) is unable to pass the spillway design flood (SDF) without overtopping the crest of the dam. A piping failure will be modeled with and/or without the auxiliary spillway. The breach will be calculated in HEC-HMS using Froehlich's breach predictor equations with breach parameter values that are optimized, such as failure time. Peak discharges for the required breach will then be inserted into HEC-RAS and modeled for the required storm events.

Based on the hydrology results of the HEC-HMS modeling and our site investigations, AMT will prepare a design report that establishes the SDF for the respective dam sites and describes the approach to the SDF requirements and for the modeling of the dam breach. A report will be prepared, and it will include drainage area mapping, hydrologic and hydraulic analysis and controlling storm events, flood inundation mapping, downstream impact summary, dam(s) stage storage, hazard classification, and discussion of each dam.

Hydraulics and Inundation Maps

Unless previously developed, floodplain or flood inundation models are available for the inundation zone, AMT will first build a model using HEC-GeoRAS to cut sections from GIS topographic data and then full valley sections will be supplemented using record drawings, field verifications, and survey field data, if necessary.

This hydraulic modeling can be done in either HEC-GeoRAS or HEC-RAS depending on the extent of survey data modification involved. The resulting geometric data will be refined in HEC-RAS to include hydraulic modeling parameters (expansion/contraction factor, Manning's roughness values, levees, ineffective flow areas, blocked obstructions and other hydraulic modeling characteristics based on observed field conditions, available data, and resulting base maps). In addition, a comparison to any known or reported high water marks can be made to allow refinement of the modeling. Although both steady and unsteady state modeling is allowed, AMT typically utilizes steady-state, one-dimensional modeling for our flood inundation studies as planned for this study.

Environmental Assessments & Permitting

AMT will prepare the required environmental assessments or studies necessary to identify natural resources potentially affected by the planned construction work. Some areas of considerations are described below.

Environmental Assessments: Although not anticipated, AMT can prepare the required Environmental Assessments (EA) required for dam rehabilitations. This will include the impacts to upstream and downstream natural resources, wetlands, waterways, trees, wildlife habitat, archeological impacts, protect species, species of special concern, construction restrictions, mitigation requirements, and limits of disturbance. The results will be summarized and considered for the dam alternatives.

Waters of the United States (WOUS): A field study of wetland and streams will be provided by AMT. US Army Corps of Engineers (USACE) jurisdictional determination for Waters of the United States can then be made, working closely with the Corps, WVDEP, and WVDA staff. The design will then minimize and mitigate these impacts, as required for the permit. If required, mitigation can be through on-site design of created wetlands by AMT, or by off-site designs, depending on the specific needs at each dam site and the available mitigation areas within the same HUC.

Archaeology: AMT can assist WVDA in the coordination of cultural resource surveys on the site if necessary as part of the environmental study of the project sites. This will include working through any phase of investigation that is necessary for previously undisturbed areas, to identify and recover resources that are encountered in coordination with the West Virginia State Historic Preservation Office (WVSHPO), prior to construction.

Recreational Uses: These lakes offer public and private recreational uses and thus, rehabilitation projects will need to minimize construction impacts and provide betterments for recreational use where possible at minimal cost. For example, clearing debris will help promote the safe recreational use of the lakes. Bathymetry and lake studies can also lead to designs that improve overall water quality. Design services can also include trail improvements, improved access, and other passive recreational benefits at little additional cost to the rehabilitation needs for the dams, while providing an amenity to visitors.

Tree Removals: An additional environmental constraint is to minimize clearing limits and tree removals, however, keeping in mind tree removal requirements on and around 25' downstream of embankments and around risers. This is

integral to the design in minimizing the project footprint, and establishing tight specifications on the project disturbed areas.

Notice of Intent or Site Registration: A Notice of Intent (NOI) or Site Registration application will be filed with the West Virginia Department of Environmental Protection (WVDEP), Division of Water and Waste Management. Erosion and Sediment Control will be developed as part of the contract drawings to include access, E/S controls, stabilization, and sequencing.

Plans, Specifications, and Estimates

Based on the design and permitting services described above, bid documents for these projects will be prepared including Schematic Design, Design Development, Construction Documents by AMT in accordance with the (Dam Safety Rule (47CSR34) requirements, USDA Field Office Technical Guide (FOTG), and/or NEH Part 642 "Specifications for Construction Contracts". Bid documents will include plans and specifications, with an estimate of construction costs included with each submittal to manage and refine overall project costs anticipated, using a "design not to exceed" approach for WVDA.

Plans: Milestone submittals of the construction drawings are planned including a cover sheet, notes, plans, erosion and sediment control plans, drainage, and grading plans, spillway profiles, spillway cross sections, access road designs, utility protection and relocation designs (if any), environmental mitigation plans (wetlands, reforestation, etc.), design for concrete structures (RCC, structural concrete, etc.), civil detail sheets (fencing, gates, grading, pipes, risers, boat launches, landscaping, product design details, etc.) and any desired recreational amenities or site betterments.

Project Specifications: Standard NRCS construction and material specifications will be used as a template from NEH Part 642 "Specifications for Construction Contracts", USDA Field Office Technical Guide (FOTG) or from other recent AMT projects. References to the West Virginia Department of Transportation and local standards and specifications will be made where necessary which will allow us to customize the NRCS specifications as necessary.

Construction Costs: The engineer's estimate of construction cost for the project will be based primarily on the bid items and unit costs taken from recent, similar projects by AMT or WVDA. Bid tabulations will also account for the changing economic conditions and locations of these dam sites.

Design Reports: Narrative reports and supporting calculations will be assembled into milestone submittals based on the NRCS specifications and checklist requirements. They will include a design memorandum, preliminary design folder and final design folder for this project. Each report will address the design objectives, supporting data, assumptions, procedures, dam hazard classification, H&H modeling, mapping / design plans, cost estimates, schedules, O&M plan, inspection staffing plan, temporary emergency action plan (EAP), and other supporting information necessary for design approval on these projects.

Bid and Construction Administration

Upon receipt of all design and permit approvals, AMT's Engineer of Record will assist WVDA in the bidding and construction administration of this project, and coordination with WV DEPDS and NRCS to include the following:

Bidding Package:

- Provide complete, signed, and sealed bid sets to include plans and specifications for advertising.
- Conduct a pre-bid meeting, prepare minutes, and respond to bidders' questions.
- Prepare addenda and distribute.
- Prepare an Engineer's cost estimate for any modifications in addenda
- Review bids, prepare bid tabulation, and provide recommendation for contract award.

Construction Contract Administration:

Upon receipt of all design and permit approvals, AMT's Engineer of Record will assist WVDA in the bidding and construction of this project, and coordination with WVDEP Dam Safety and NRCS to include the following:

- Construction Project 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 NRCS and County requirements with adherence to all permit conditions and requirements for the project.
- Substantial and Final Completion inspections, including punch lists for final acceptance of the completed work and a release of retainage.

- WVDEP-Dam Safety paperwork for the Certificate of Approval. A construction completion report with as-builts along with electronic copies of all construction documentation prior to project closeout will be provided.

Other construction phase services by our team may include the following:

- On-site Quality Assurance (QA) inspections as necessary to include periodic or daily inspections in accordance with the 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 upon the progress of the work.
- Preparation of as-built construction drawings by an AMT WV Licensed Surveyor along with any quantity measurements for earthwork and other pay items.
- Environmental permitting and inspections by AMT to include adherence to all permit conditions for the project, and coordination with permitting agencies based upon the work, and for any issues encountered.

Budget Tracking and Compliance

AMT utilizes Deltek Vision® for project management. This program provides real time information regarding time and related cost associated with a project or task. This is web based and is available remotely to staff at all times.

Project Quality Control

AMT has an extensive Quality Assurance / Quality Control (QA/QC) Program, which is implemented on all projects regardless of size or complexity. This program focuses on QA/QC measures that will be applied during project execution to be certain that work is technically appropriate, accurate, and complete. AMT extends this management approach to include its subconsultants work as well as their own.

Quality Assurance Procedures: Delivery of a quality project is AMT's primary goal, and we maintain a rigorous quality assurance/quality control (QA/QC) Program to assure accuracy and completeness of contract documents, compliance with standards, and adherence to budgets and schedules. Don Rissmeyer, PE, Project Manager, will be responsible for Quality Control (QC), and Stuart Robinson,

PE is responsible for Quality Assurance. All review comments will be compiled at each submittal stage, and a response will be prepared and returned to WVDA 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 QC procedures that are required through all phases of a project. The process starts with and is the responsibility of **Mr. Rissmeyer, Project Manager**, who has 24 years of extensive dam engineering, regulatory, planning and civil engineering design experience. 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 QC check at each milestone during each phase of design and construction. AMT incorporates a QC 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 (ASCE approach) for verification of 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. Robinson, PE will monitor the overall project progress to ensure that schedules are met and appropriate personnel are provided to 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 the past five (5) years, our QA/QC programs have allowed us to receive above average consultant evaluation scores from our clients in most cases, and AMT projects have an average change order value of <3% of the construction cost.



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: 405455

Doc Description: Addendum 01, WV Department of Agriculture

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Close	Solicitation No		Version
2018-01-22	2018-02-01 13:30:00	CEOI	1400 AGR1800000001	2

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON

US

WV 25305

Vendor Name, Address and Telephone Number:

A. Morton Thomas and Associates, Inc.
 417 Grand Park Drive, Suite 102
 Parkersburg, WV 26105
 (304) 400-4952

FOR INFORMATION CONTACT THE BUYER

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

Signature X

Stuart Robinson

FEIN # 52-0728302

DATE January 31, 2018

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

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI 1400 AGR1800000001

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

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

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

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

A. Morton Thomas and Associates, Inc.

Company

Stuart Robinson

Authorized Signature

January 31, 2018

Date

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

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 OTHER 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 §§1-5-3) 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: *Smart Robinson* Date: January 31, 2018

State of Maryland

County of Baltimore, to-wit:

Taken, subscribed, and sworn to before me this 30 day of January, 2018.

My Commission expires December 8, 2019, 2019.

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature]
Purchasing Affidavit (Revised 07/07/2017)

**ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:**

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A. Morton Thomas and Associates, Inc.

Company

Shawn Robinson

Authorized Signature

January 31, 2018

Date

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

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.

Stuart Robinson

(Name, Title)

Stuart Robinson, Principal

(Printed Name and Title)

417 Grand Park Drive-Suite 102-Parkersburg, WV 26105

(Address)

304-400-4952 / 304-400-4953

(Phone Number) / (Fax Number)

srobinson@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)

Stuart Robinson

(Authorized Signature) (Representative Name, Title)

Stuart Robinson, Principal

(Printed Name and Title of Authorized Representative)

January 31, 2018

(Date)

304-400-4952 / 304-400-4953

(Phone Number) (Fax Number)