

# West Virginia Division of Natural Resources

## Architectural and Engineering Services for Modifications/Repairs of Six (6) Dams

Solicitation No. DNR1800000005



# AMT

A. Morton Thomas and Associates, Inc.  
Consulting Engineers

**December 13, 2017**

West Virginia Division of Natural Resources  
Property and Procurement Office  
324 4<sup>th</sup> Avenue  
South Charleston, WV 25303

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

## 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, Cane 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 (Woodglan 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        |

## STAFFING PLAN

### STAFFING PLAN

AMT will provide 100% of the required services for this contract in-house, including any required additional services that may arise. We propose the following team organization plan to WVDNR for this project.

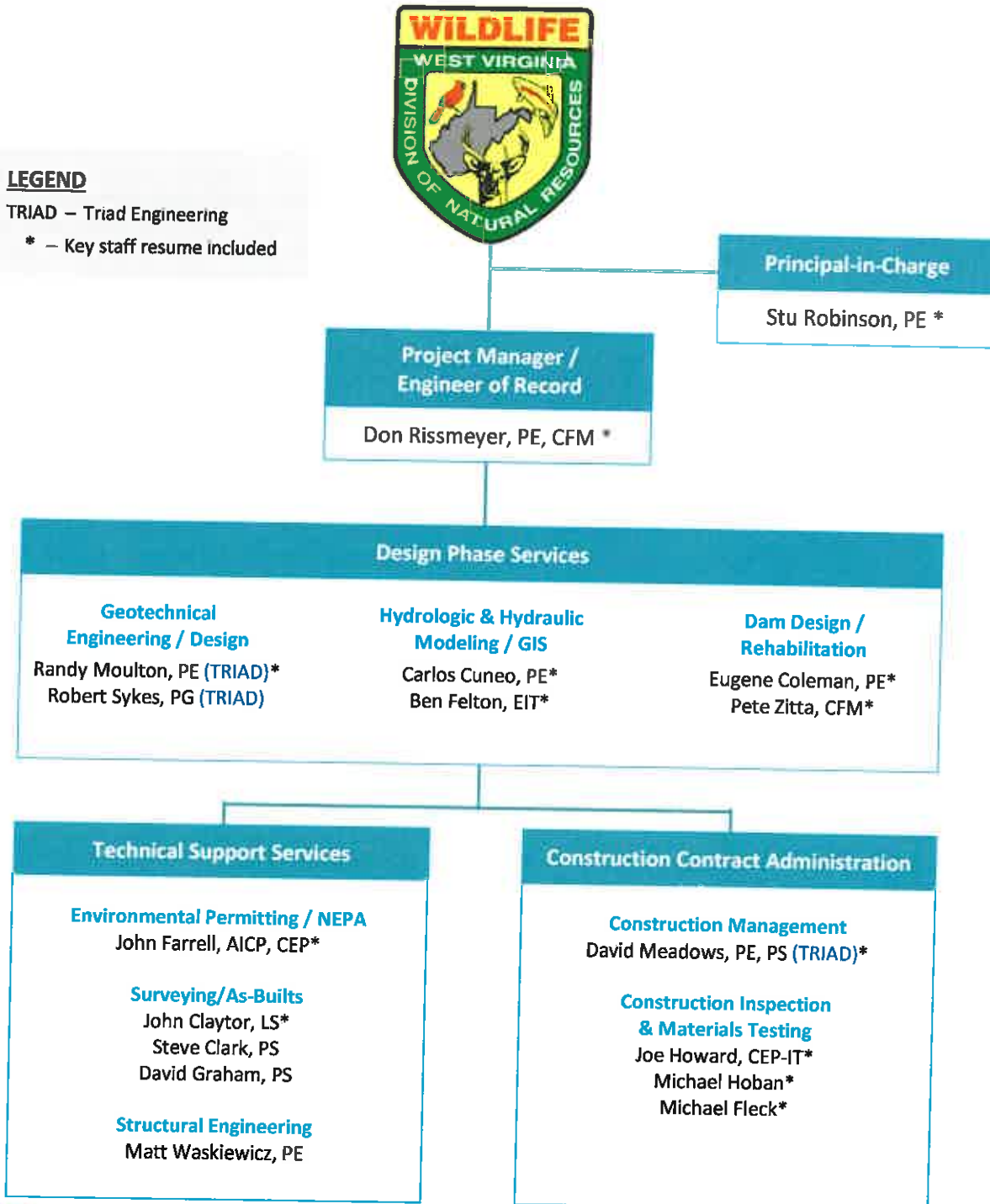
### KEY STAFF RESUMES

Resumes for the project are provided on the following pages in this section.

#### LEGEND

TRIAD – Triad Engineering

\* – Key staff resume included





## 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, No. 021465

### 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.



## 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.



## 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.

#### 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

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.

### 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 1'. 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.



## 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): #011195

### Years of Experience

Total: 18  
With AMT: 18





## 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 No.  
#2288, 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.



## 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.

### 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

## 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/Bridges projects, Industrial and Commercial projects. He has provided these services throughout our service area of operations as can be seen on the following representative project list.

#### Dam and Impoundment Projects:

Elkwater Fork Dam - Elkins, WV

Wallback Dam - Wallback, WV

#### Water and Wastewater Projects:

I and I Study - Cadiz, OH

Phase II Water Distribution System - Mason, WV

East Beckley WWTP - Beckley, WV

Bradley WWTP - Bradley, WV

### 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



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

AUGUSTA COUNTY, VIRGINIA



Through a countywide term contract for civil engineering, AMT was issued a task order to provide construction management services for Augusta County for this Flood 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 (Howdyshell Excavating) at \$3.0M which was below NRCS engineer's estimate (\$3.6M).

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

| Project Information  |                               |
|--|-------------------------------|
| <b>a. Project Name:</b>  | Todd Lake Dam Rehabilitation  |
| <b>Location:</b>   | Augusta County, Virginia      |
| <b>Dates of Design:</b>  | 2016                          |
| <b>Dates of Construction:</b>                                      | 2017                          |
| <b>b. Client Name and Contact Information:</b>                     |                               |
|  | Augusta County                |
|  | 18 Government Center Lane     |
|  | Verona, VA 24482              |
|  | Contact: Doug Wolf, PE        |
|  | Phone: (540) 245-5700         |
|  | Email: wolfe@co.augusta.va.us |
| <b>c. Project Description</b>                                      | See attached                  |
| <b>d. Sketch, Image, or Photos to help Illustrate the Project:</b> | See attached                  |
| <b>e. Cost of Design Services:</b>                                 | \$185,000                     |
| <b>f. Cost of Construction:</b>                                    | \$3.0 M                       |

Two (2) pre-construction meetings were held with Howdyshell 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.

# Briery Creek Dam Modifications and Repairs

PRINCE EDWARD COUNTY, VIRGINIA

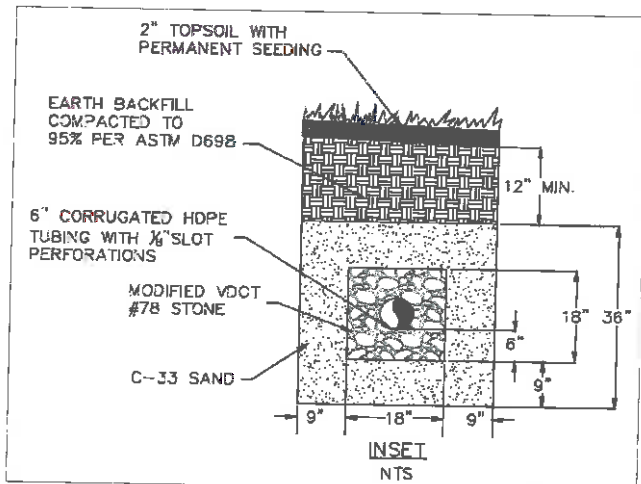
Through a statewide term contract, AMT is providing dam safety and related engineering services for a portion of the 38 regulated dams on DGIF properties and throughout Virginia. This includes Briery Creek Dam.

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.



Graded Filter Drain

## Project Information

**a. Project Name:** Briery Creek Dam Alterations  
**Location:** Prince Edward County, Virginia  
**Dates of Design:** 2014-2015  
**Dates of Construction:** 2015

**b. Client Name and Contact Information:**  
 Department of Game and Inland Fisheries (DGIF)  
 7870 Villa Park Drive, Suite 400, Henrico, VA 23228  
 Contact: Phil Lownes, VCCO  
 Phone: 804-367-1253  
 Email: Phil.Lownes@dgif.virginia.gov

**c. Project Description**  
 See attached

**d. Sketch, Image, or Photos to help Illustrate the Project:**  
 See attached

**e. Cost of Design Services:** \$36,580

**f. Cost of Construction:** \$98,000



# Todd Lake Dam Modifications and Repairs

AUGUSTA COUNTY, VIRGINIA

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 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.

| Project Information  |                               |
|--|-------------------------------|
| <b>a. Project Name:</b>  | Todd Lake Dam Alterations     |
| Location:  | Augusta County, Virginia      |
| Dates of Design:   | Not Applicable                |
| Dates of Construction:   | 2015-16                       |
| <b>b. Client Name and Contact Information:</b>                     |                               |
| Augusta County, Virginia   |                               |
| 18 Government Center Lane, Verona, VA 24482                        |                               |
| Contact:   | Doug Wolfe, PE                |
| Phone:   | (540) 245-5600                |
| Email:   | dwolfe@co.augusta.va.us       |
| <b>c. Project Description</b>                                      | See attached                  |
| <b>d. Sketch, Image, or Photos to help illustrate the Project:</b> | See attached                  |
| <b>e. Cost of Design Services:</b>                                 | \$70,000 construction manager |
| <b>f. Cost of Construction:</b>                                    | \$3,000,000                   |



# Veteran's Memorial Dam Modifications and Repairs

LAKE OF THE WOODS ASSOCIATION, ORANGE COUNTY, VIRGINIA

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

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

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

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

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

## Project Information

**a. Project Name:** Veteran's Memorial Dam Rehabilitation  
Location: Orange County, Virginia  
Dates of Design: 2013-2014  
Dates of Construction: Nov 2014

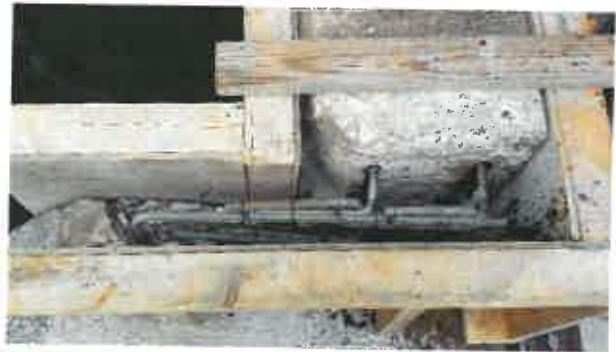
**b. Client Name and Contact Information:**  
Lake of the Woods Association, Inc.  
102 Lakeview Parkway, Locust Grove, VA 22508  
Contact: Jessie Graves, Director of Facilities  
Phone: 540-972-2254  
Email: [jgraves@lowa.org](mailto:jgraves@lowa.org)

**c. Project Description**  
*See attached*

**d. Sketch, Image, or Photos to help illustrate the Project:**  
*See attached*

**e. Cost of Design Services:** \$42,500

**f. Cost of Construction:** \$295,000



## II. Approach and Methodology

### PROJECT UNDERSTANDING

The West Virginia Division of Natural Resources (WVDNR), Wildlife Resources Section seeks a qualified engineering firm to provide architectural/engineering firms to design and specify modification or repairs to six (6) dams to bring them into compliance with Dam Safety Regulations or to remove them from jurisdiction. The dams and locations include the following:

- Upper Deckers Creek No. 3 Dam, ID #07708, near Reedsville, Preston County.
- Upper Deckers Creek No.7 Dam, ID #07712, near Reedsville, Preston County.
- Fairfax, Pond Dam, ID #077-2, near Arthurdale, Preston County.
- Rollins Lake Dam #1, ID #03513, near Evans, Jackson County.
- Rollins Lake Dam #2, ID #03514, near Evans, Jackson County.
- Turkey Run Dam, ID #03519, near Ravenswood, Jackson County.

**Upper Deckers Creek No. 3 Dam:** The dam was constructed in 1968 and is located on a tributary of Dillan Creek. This dam is comprised of earth construction with rock foundation with an approximate height of 14 feet and a length of 268 feet. The drainage area to the dam is approximately 1.24 square miles with a maximum storage capacity of 78 acre-feet. The dam has a concrete riser, a CMP principal spillway, and an excavated trapezoidal auxiliary spillway and eventually receives the discharges from the Upper Deckers Creek No. 7 Dam. A Certificate of Approval was submitted in 1983 for the dam being a Class 3 dam, but an approval was never issued. Currently, the dam is estimated to be a Class 1 dam (to be verified). A Certificate of Approval is still required for this dam. A new dam break analysis will be required for issuance of the Certificate of Approval. The facility is used for fish and wildlife protection and flood control.

**Upper Deckers Creek No. 7 Dam:** The Dam was constructed in 1968 and it is located on a tributary of Dillan Creek, upstream of Upper Deckers Creek No. 3 Dam. This dam is of earthen construction with rock and soil foundation with an approximate height of 15 feet with a length of 545 feet. The drainage area to the dam is

approximately 1.24 square miles with a maximum storage capacity of 98 acre-feet. The dam has a concrete riser, a CMP principal spillway, and an excavated trapezoidal auxiliary spillway and eventually receives the discharges from Upper Deckers Creek No. 7 Dam. A Certificate of Approval was submitted in 1983 for the dam being a Class 3 dam, but an approval was never issued. Currently, the dam is estimated to be a Class 1 dam (to be verified). A Certificate of Approval is still required for this dam. A new dam break analysis will be required for issuance of the Certificate of Approval. The facility is used for fish and wildlife protection and flood control.

**Fairfax Pond Dam:** The dam is comprised of earthen construction with a height of approximate 13 feet and a length of 580 feet. The dam does not have a riser but has a 36-inch concrete principal spillway pipe set at the wet pool elevation and a 36-inch steel auxiliary spillway pipe set higher than the principal spillway pipe. Discharges eventually end up in the Upper Deckers Creek No. 6 Dam. The dam is estimated to be a Class 1 dam (to be verified). There is no Certificate of Approval on file with WV DEP Dam Safety (DS), and no dam break analysis has been performed. The facility is used mainly used for fish and wildlife protection.

**Rollins Lake Dam #1 (Rollins Lake):** This dam was constructed in 1956 and is believed to be spring fed. The dam is rock fill with a height of 9 feet, a length of 700 feet, and a maximum storage capacity of 179 acre feet. The dam has a metal riser, a 12" PVC principal spillway pipe, and no auxiliary spillway. The dam is estimated to be a Class 2 dam (to be verified). There is no Certificate of Approval on file with WV DEP Dam Safety (DS), and no dam break analysis has been performed. The facility is used mainly used for recreation purposes.

**Rollins Lake Dam #2 (Rollins Lake):** The Dam is located on Mill Creek and was constructed in 1956. This dam is comprised of rock fill with a height of 7 feet, a length of 900 feet and a maximum storage capacity of 179 acre feet. There are no spillways along this dam, but Rollins Lake is controlled by the Dam #1 spillway. The dam is estimated to be a Class 2 dam (to be verified). There is no Certificate of Approval on file with WV DEP Dam Safety (DS), and no dam break analysis has been performed. The facility is used mainly used for recreation purposes.



- Ensure outfall areas are free 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).
- Provide plans to install/update riser trash racks.
- Provide plans for any modifications required.
- Monitoring of animal activities and repairing/filling animal burrows.
- Monitoring the embankment slopes for seepage, instability, slides, erosion, and wave erosion.
- Keep the dams in good mowing condition.
- Immediately inform WVDEP-DS of any sign of possibly failures.

## APPROACH AND METHODOLOGY

The following approach and methodology to achieve the goals will be followed for each of the dam sites.

### PROJECT KICKOFF AND NTP

Following receipt of notice-to-proceed, AMT will schedule a kickoff meeting with WVDNR Wildlife Resources Section. 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. A scope of work will be developed for each dam for review and approval from DNR.

**Goals/Objective 1:** *Review existing plans and conditions as well as the operation of the facility and evaluate while communicating effectively with the owner to determine a plan that can be implemented in a manner that will minimize disruption to current operation of the facility and meet all objectives.*

### REVIEW OF EXISTING INFORMATION AND DATA

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

- Maintenance reports, including coordination with the WVDNR Wildlife Resources Section as to the condition of the dams;

- 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 which could help in developing the current dam capacity, release rates, dam water surface elevations, dam breach, and flood inundation areas, and making best use of previously developed information.

- 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 WVDNR Wildlife Resources Section 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

Field investigations of each dam site will be conducted to assess the condition of the dams and the preliminary recommendations for improvements, rehabilitation, and/or additional concerns that would require evaluation in our designs. AMT reviewed the WVDEP Dam Safety (DS)

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 WVDNR Wildlife Resources Section to determine the extent of surveying required for the dams. This 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 to include:
  - 100-ft upstream (possibly downstream);
  - Toe of slope upstream and downstream of roadways;
  - High side or centerline profile of traveled surface; and
  - 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 the
- 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**

The HEC-HMS program 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 for use include XPSWMM, Win TR-55, Win TR-20, SITES, and HydroCadd.

## **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. As summarized in the WVDEP-DS inspections, the dams have been tentatively classified as either Class I or II which 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.

additional cost to the rehabilitation needs for the dams, while providing an amenity to park 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, 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, UDSA 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 WVDNR.

**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", UDSA 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 WVDNR. 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.

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**Goals/Objective 3: Provide Construction Contract Administration Services with competent professional that ensures that project is constructed and functions as designed.**

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Upon receipt of all design and permit approvals, AMT's Engineer of Record will assist WVDNR Division of Wildlife Resources Section in the bidding and construction of this project, and coordination with WV DEP DS and NRCS to include the following:

- Assistance during the Bid Phase to include a pre-bid meeting agenda, pre-bid meeting notes, bid addenda, and other assistance leading to the bid opening.
- Assistance during the Procurement Phase including a bid analysis and recommendation of award, and leading to a Construction Contract.
- 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.

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 § 23-26-2, 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 §81-5-3) 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.

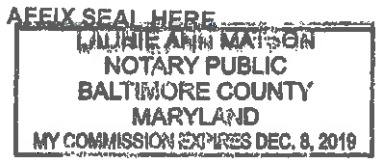
Authorized Signature: Stuart Robinson Date: 12/12/2017

State of Maryland

County of Baltimore, to-wit:

Taken, subscribed, and sworn to before me this 12 day of December, 2017.

My Commission expires December 8, 2019.



NOTARY PUBLIC Julie Ann Matson  
Purchasing Affidavit (Revised 07/07/2017)

ADDENDUM ACKNOWLEDGEMENT FORM  
SOLICITATION NO.:

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

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

Addendum Numbers Received:

*(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

*Spencer Robinson*  
Authorized Signature

12/12/2017  
Date

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