



## CAMP DAWSON

Pierce Lake Dam Repair Design - CEOI ADJ2000000010

Submitted by:  
The Thrasher Group, Inc.  
May 14, 2020



COMPLEX PROJECTS  
REQUIRE RESOLVE  
**THRASHER'S GOT IT**

March 14, 2020

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

*RE: Camp Dawson Pierce Lake Dam Repair Design*

Dear members of the selection committee:

The Thrasher Group is pleased to present our qualifications for designing and developing construction documents to repair the Pierce Lake Dam at Camp Dawson. Our multi-disciplinary team of engineers, surveyors, and construction administrators will work together to ensure a smooth, seamless process for your project. Our objective in dam repair goes beyond just the engineering aspects of the project; we will work as a partner with the WV National Guard team to understand their present and future needs. With that information, we will coordinate with them to evaluate Pierce Lake Dam and to offer the most effective solution that best suits their short and long-term goals.


Our team understands that addressing the issues with the Pierce Lake Dam is of the utmost importance to the Camp Dawson area. As a result of this, we have assembled the right team that is experienced with dam assessments, modifications, and repairs. We are a full-service A/E firm that can carry these projects from concept through construction closeout. Thrasher can provide anything from aerial mapping to inspection and materials testing services to better enhance your projects.

Thank you for considering the Thrasher Team and for providing us this opportunity. We look forward to your positive reception of our proposal and to meet with you to further demonstrate the commitment, dedication, and support we will bring to the your project.

Sincerely,  
The Thrasher Group, Inc.

Jeff Gola, PE  
Project Manager

**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.

  
\_\_\_\_\_  
(Name, Title)  
Jeff Gola, Project Manager  
\_\_\_\_\_  
(Printed Name and Title)  
600 White Oaks Blvd | Bridgeport, WV 26330  
\_\_\_\_\_  
(Address)  
304-624-4108 | 304-624-7831  
\_\_\_\_\_  
(Phone Number) / (Fax Number)  
jgola@thetrashergroup.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.

The Thrasher Group, Inc.  
\_\_\_\_\_  
(Company)

 Project Manager  
\_\_\_\_\_  
(Authorized Signature) (Representative Name, Title)

Jeff Gola, Project Manager  
\_\_\_\_\_  
(Printed Name and Title of Authorized Representative)

May 12, 2020  
\_\_\_\_\_  
(Date)

304-624-4108 | 304-624-7831  
\_\_\_\_\_  
(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA  
Purchasing Division  
**PURCHASING AFFIDAVIT**

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

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

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

**DEFINITIONS:**

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

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

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

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

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: The Thrasher Group, Inc.

Authorized Signature: [Signature]

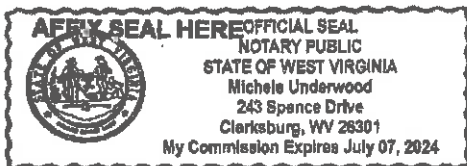
Date: 5/12/2020

State of WV

County of HARRISON, to-wit:

Taken, subscribed, and sworn to before me this 12<sup>th</sup> day of May, 2020

My Commission expires JULY 1, 2024



NOTARY PUBLIC

[Signature]

Purchasing Affidavit (Revised 01/10/2018)



- > Utility Engineering
- > Architecture
- > Site Engineering
- > Environmental
- > Survey
- > Transportation
- > Construction Services
- > Geospatial

**Main Point of Contact:**

Jeff Gola, PE  
 Project Manager  
 jgola@thethrashergroup.com  
 Cell: 304-677-9830  
 Office: 304-326-6109



**8**

**OFFICES**  
 in five states:  
 West Virginia  
 Virginia  
 Pennsylvania  
 Ohio  
 Maryland



**500+**

**EMPLOYEES**

- 47** Licensed Professional Engineers
- 20** Licensed Professional Surveyors
- 6** Licensed Professional Architects
- 3** Licensed Professional Landscape Architects



**37**

**YEARS**  
 of delivering  
 successful  
 projects

Diverse services that grow communities.

THRASHER'S GOT IT.



## DAM SAFETY ENGINEERING INVESTIGATION

Thrasher's engineers conduct dam safety (hazard classification/rehabilitation assessment) for public and private clients. The dams investigated range in function from single purpose structures (flood prevention or recreation) to multiple-purpose structures (flood prevention, water supply, and/or recreation).

Our objective in dam safety engineering investigation goes beyond the engineering aspects of the project; we work as a team with our clients to understand their present and future needs. With that information, we coordinate with the client to evaluate their dam and to offer the most effective solution that best suits their short- and long-term goals.

### Dam Safety Services:

- > Dam Hydrology and Hydraulic Principles/ Procedures
- > Dam Hazard Classification
- > Sedimentation Storage Requirements
- > Geologic Investigations
- > Earth Embankment and Foundation Design
- > Principal and Axillary Spillway Design



## SURVEY AND MAPPING SERVICES

Thrasher employs one of the largest survey departments in the Mid-Atlantic region and offers a wide range of land surveying and related services for federal, state, and private clients. We are committed to evolving our techniques and equipment to best serve our clients and their growing needs.

At Thrasher, we are able to provide both surveying and engineering services which provide a distinct advantage over survey-only companies. The combination of these two services provide our surveyors with a better understanding of what engineers and architects require to develop an appropriate design for different types of projects. Our field and survey personnel offer extensive experience, certified training, and flexibility to meet our clients' unique project schedules.

### Route Location Surveys:

- > Transmission Lines
- > Natural Gas Pipelines
- > Wind Turbine
- > Roadway, Railway, and Rec Trails

### GPS Surveys:

- > Geodetic Control Networks
- > Ground Control for Aerial Mapping
- > Telecommunications
- > FAA 1A and 2C Letters

### General Survey Services:

- > Large-Scale Boundary Work
- > Topographic Survey and Mapping
- > ALTA/ACSM Survey and Mapping
- > Lake and River Soundings
- > Accident Reconstruction Survey & Mapping
- > Drug-free Zone Mapping
- > Expert Witness Testimony
- > Construction Layout
- > Permanent Project GPS Base Stations
- > Building Control and Layout
- > Road/Bridge Alignment and Staking
- > Sewer/Water/Pipeline
- > Site Layout
- > Quality Assurance Surveying
- > Volume/Quantity Surveys
- > As-Built Surveys

### Coal and Energy Surveys:

- > Pre and Post Mining Blast Surveys
- > Water Quality Monitoring Plan
- > Construction Layout
- > Emergency Control Survey/Plans



## ENVIRONMENTAL SERVICES

In today's ever-changing regulatory landscape, compliance with federal and state environmental laws is critical to the success of projects. Compliance can often seem at odds with the project vision and financial constraints. The Thrasher team partners as a technical and regulatory advocate to overcome obstacles and guide our clients through complicated policies to achieve their goals. From initial investigations to final design, our environmental experts are there to assist in all facets of our clients' projects. Our team has developed relationships with academic consultants from multiple universities that are here to aid in specialized assessments.

### **Environmental Services:**

- > All Appropriate Inquiry (AAI)
- > Environmental Site Assessments
- > NEPA Compliance for Publicly Funded Projects
- > Ecological Studies
- > Brownfield Redevelopment
- > Industrial Hygiene and Demolition Planning
- > Underground Storage Tank (UST) Consulting Services
- > Wetland Delineation, Design, and Mitigation
- > Remediation Investigation, Feasibility Studies, and Design
- > Hydrogeologic and Geologic Investigations
- > Groundwater Monitoring
- > Sampling and Laboratory Analysis
- > Solid and Hazardous Waste Management
- > SPCC, GPP, SWPPP, GWPP, SWPPP Environmental Compliance
- > Coal Combustion Residuals Rule Compliance (CCR)
- > Stream Assessments, Design, and Mitigation
- > Erosion and Sediment Control Plans
- > Voluntary Remediation Program
- > Uniform Environmental
- > Covenants Act
- > CERCLA Preliminary Assessment
- > CERCLA Site Investigation





## ENVIRONMENTAL PERMITTING

The Environmental Division of the Thrasher Group provides permitting, consulting, and assessment services to a multitude of clients spanning the Mid-Atlantic region. With a combined 40 years of permitting experience, Thrasher's Environmental Scientists, Permitting Leads, and Project Managers are able to take even the most complex and time restrictive projects and provide clients with cost effective and timely solutions.

### Federal Permitting

- > National Historic Preservation Act - Section 106 Consultation
  - > *State Historic Preservation Office or Division of Culture and History*
- > Endangered Species Act - Section 7 and Section 9 Consultations
  - > *United States Fish and Wildlife Service*
- > Clean Water Act - Section 404 Permits
  - > *United States Army Corps of Engineers*

- > National Environmental Policy Act - Categorical Exclusions, Environmental Assessments, and Short Environmental Assessment Forms
  - > *United States Army Corps of Engineers; Federal Aviation Administration; Division of Transportation; and Federal Communications Commission*

### State and Local Permitting

- > State Responsible Regulations of the Clean Water Act - Section 401 and 402 Permits
- > State Level Rare, Threatened, or Endangered Species Consultations
- > State Level Aquatic Resource Encroachment and Impact Permits
- > State Level Roadway Encroachment, Crossing, and Occupancy Permits
- > State Level Industrial Waste Discharge Permits
- > Local Level Floodplain or Building Permits



## CONSTRUCTION ADMINISTRATION

Effective management of our projects ensures that both clients and contractors work in an efficient and safe manner. From pre-construction activities - such as bid conferences and surveys - to inspections, job progress reviews, and on through final completion, our goal is work that proceeds in accordance with plans and specifications.

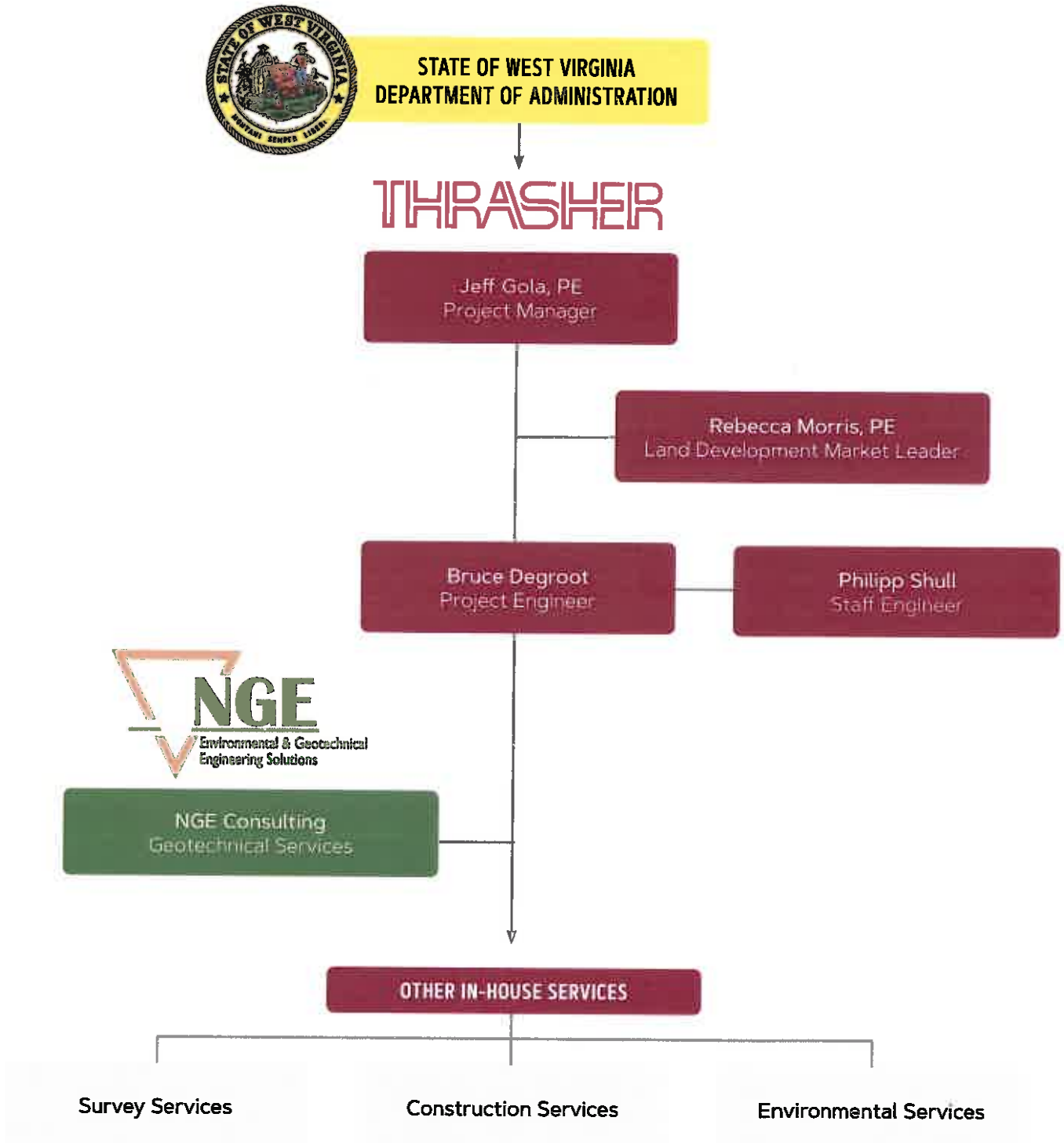
At Thrasher, we inspect and manage a wide variety of projects designed by our firm in addition to projects for contractors and other designers. We have certified project representatives responsible for overseeing every element of design integrity. Our methods have earned the respect of not only our clients, but contractors and project owners alike.

### Construction Inspection Services:

- > Construction Materials
- > Pipelines
- > Structural Steel & Concrete
- > Paving
- > Drainage
- > Embankments
- > Work Zone Safety & Traffic Control
- > Erosion and Soil Control

### Quality Control and Assurance Methods:

- > Regularly Scheduled Planning and Progress Meetings
- > Engineering During Construction
- > Daily Logs and Progress Sheets
- > Cut Sheets
- > Quantity Tracking



Project Manager



Jeff Gola, PE is an integral part of The Thrasher Group's Site Division. He has accrued more than 20 years of experience in the design and construction of public works projects. In that time, Jeff has been a part of a variety of project types, including sidewalks, dams, bridges, roadways, stormwater systems, and retaining walls. He has dedicated much of his career to understanding the structural design elements that govern these infrastructure projects and takes a methodical design process to ensure his work takes these elements into account so his projects remain safe, stable, and secure throughout their use.

### Education

Bachelor of Science,  
Civil Engineering  
West Virginia University

### Registrations

Professional Engineer:  
> West Virginia  
> Maryland

### Affiliations

- > American Society of Highway Engineers
- > American Society of Civil Engineers

In addition to his public works projects, Jeff is also highly experienced in the transportation world. He has built a large portfolio of these projects over the years, having been involved in more than \$100 million worth of critical transportation infrastructure. He has worked alongside the West Virginia Division of Highways for 17 years and has also become an expert in airport design and construction, working directly with the Federal Aviation Administration.

### Experience

**Buffalo Lake Dam Improvements and Inspection**  
Role: Project Manager  
> Pocahontas County, WV

**Camp Galilee Dam Improvements, Certification, and Inspection**  
Role: Project Manager  
> Preston County, WV

**City of Philippi Little Laurel Run Water Supply Dam**  
Role: Project Engineer  
> Barbour County, WV

**City of Salem Upper and Lower Dog Run Dam Improvements and Inspections**  
Role: Project Manager  
> Harrison County, WV

**Dent's Run Dam Inspections and Monitoring**  
Role: Project Manager  
> Marion County, WV

**Flat Run Lake Dam Emergency Rehabilitation and Inspection**  
Role: Project Manager  
> Tucker County, WV

**Rock Lake Dam Improvements and Inspections**  
Role: Project Manager  
> Marion County, WV

**Canaan Valley North Gate Dam**  
Role: Project Manager  
> Tucker County, WV

Project Engineer



## Education

Bachelor of Science,  
Civil Engineering  
Fairmont State University

## Affiliations

> WVDOH TRET - Level III

Bruce Degroot joined Thrasher in 2008 following his graduation from Fairmont State University. He began his career at Thrasher as a Project Representative but has since proven his talent and advanced within the firm. Currently, Bruce is serving as Staff Engineer in the Transportation and Site Divisions. Bruce is responsible for assisting with design, site plans, grading, field inspections, contract specifications, and other various project tasks.

Bruce's experience in the field has translated over to his work as a Staff Engineer. He is able to apply the knowledge he gained on-site to the designs he develops now. This experience has made him a well-rounded member of the Division.

## Experience

### Camp Galilee Dam Improvements, Certification, and Inspection

Role: Project Engineer  
> Preston County, WV

### Kitzmillier, MD Dam Levee Certification

Role: Project Engineer  
> Garrett County, MD

### Little Laurel Run Water Supply Dam

Role: Drafting for project and  
design details  
> Barbour County, WV

### Mingo County Dam Levee Certification

Role: Project Engineer  
> Mingo County, WV

### City of Salem Upper and Lower Dog Run Dam Improvements and Inspections

Role: Project Engineer  
> Harrison County, WV

### Rock Lake Dam Improvements and Inspections

Role: Project Engineer  
> Marion County, WV

Staff Engineer



## Education

Bachelor of Science,  
Civil Engineering  
Fairmont State University

Phillip Shull is currently a staff engineer within the water resources market at Thrasher. He has experience with several types of projects including sidewalk, roadways improvement/repair, and site projects. He also has worked on drainage calculations, stormwater design, and more.

Before coming to Thrasher, Phillip was a project engineer, estimator, and super intendent for a construction company. The construction focused primarily on bridge rehabilitation projects throughout the US.

## Experience

### **Rock Lake Dam Improvement and Inspections Design and inspection of the dam**

Role: Staff Engineer

> Marion County, WV

### **A&O Farm Dam Inspection Dam Inspection and Dam Safety Report**

Role: Staff Engineer

> Wood County, WV

### **Maple Lake Dam Dam Drainage Repair**

Role: Staff Engineer

> Harrison County, WV

Land Development Market Leader



Rebecca Morris, PE leads Thrasher's Land Development Market. With nearly two decades experience in the land development industry, Rebecca brings the knowledge and expertise to bring these projects from concept to completion. Rebecca has refined her management skills and technical expertise by working on complex and diversified land development projects. Rebecca's in-depth understanding of site layout, design, permitting, and funding have enabled her to successfully deliver quality engineering solutions for both public and private clientele through-out the region.

## Education

Bachelor of Science,  
Civil Engineering  
West Virginia University

## Registrations

Professional Engineer:  
> West Virginia

## Affiliations

- > Leadership Monongalia
- > West Virginia Oil and Natural Gas Association
- > Marcellus Shale Coalition
- > Women's Energy Network

Rebecca manages a team of highly skilled project managers, design engineers, and land planners at Thrasher and works closely with them to ensure that clients receive a quality project and a positive experience. Working together as a unified team, they achieve this by keeping clients fully aware of project scheduling and delivery and facilitating project meetings and regulatory agency discussions.

## Experience

**WVU College of Physical Education and Sport Sciences New Building Construction**  
Role: Project Engineer  
> Monongalia County, WV

**WVU Peponoe Run Flood Study**  
Role: Project Engineer  
> Monongalia County, WV

**WVU University Avenue Traffic Study**  
Role: Project Engineer  
> Monongalia County, WV

**Concord University Feasibility Study**  
Role: Project Engineer  
> Mercer County, WV

**Morgantown Municipal Airport Industrial Access Road**  
Role: Project Engineer  
> Monongalia County, WV

**WestRidge Commercial and Retail Development**  
Role: QA/QC  
> Monongalia County, WV

**Potomac State College Connecting Link Addition: Administrative Building and Academy Hall**  
Role: Project Engineer  
> Mineral County, WV

## Company Overview



NGE was founded in the fall of 2002 by Amy Veltri and John Nottingham, a management team with a combined forty years of industry experience. The family-based entrepreneurial spirit that defined NGE's beginnings remains evident in the innovative solutions we deliver to our loyal clients each and every day. Advances in engineering, science and technology, coupled with regulatory, legal, and compliance pressures create increasingly complex challenges for businesses. NGE strives to keep pace with these changes, with an eye to supporting our clients' changing needs.

NGE has grown into a dependable and flexible environmental and geotechnical consulting firm providing a wide range of professional services, including Environmental Consulting, Geotechnical Engineering and Environmental Construction / Remediation. With clients across the nation, NGE added a second office location in West Virginia in 2003, and seeks to grow in the future by providing consistent, quality service in a family-oriented atmosphere.

Since its inception, NGE has hired and retained the best and brightest talent in the industry. Our staff have relevant experience and qualifications to complete complex environmental and geotechnical projects. NGE's future is bright as we pursue a course of planned, measured growth to meet the challenge of expansion without diluting leadership or weakening the company's ability to perform. After establishing a solid foundation and longstanding reputation in the region and across the nation as an innovative, sophisticated, forward-thinking environmental and geotechnical consulting firm, we are proud of our roots and the progressive environment we have created for our dedicated employees.

NGE is an organization that is small enough to focus time on each client but with a depth in talent and resources to successfully complete large and complex projects. NGE provides superior environmental and geotechnical services at a manageable price. A family oriented work atmosphere has fostered the growth of NGE's staff with the best and brightest talent in the industry.

NGE has garnered a variety of certifications and awards over the years in the environmental and geotechnical consulting industry. These accomplishments and accolades bear testament to the impeccable standards that we strive to achieve at NGE. They help differentiate our company from our competitors and serve to distinguish our employees as the "best of the best."



A critical step in meeting your goals is first ensuring we understand them. Thrasher's team has thoroughly reviewed the Expression of Interest request and is confident in our ability to deliver the highest-quality solutions to your problems. We are capable of meeting each goal/objective you have outlined and feel strongly that you will be satisfied with the outcomes you receive.



We understand your goals for the dam repair and will handle them in the following manner:

## GOAL/OBJECTIVE 1

Thrasher's Design Team will provide all engineering design. We will also prepare all construction bid documents for West Virginia State Purchasing. Our designers will focus on the repair of the earthen dam at Pierce Lake. We ensure that our repairs will stop leaks and will remain sustainable.

## GOAL/OBJECTIVE 2

Our designers will design a new control structure for Pierce Lake if deemed necessary during the engineering assessment.

## GOAL/OBJECTIVE 3

Our designers will be responsible for researching and investigating the location of existing underground and above ground utilities. Our team will provide mapping for both existing and proposed utilities. We will also provide any changes made to utility plans.

## GOAL/OBJECTIVE 4

Our sub-consultant NGE will provide all geotechnical work which may include drill borings, boring maps, and geotechnical reports.

## GOAL/OBJECTIVE 5

Drawings and specifications will be submitted at 35%, 65%, 95%, and 100%. Additionally, our in-house cost estimator will provide estimating services with each submission.

## GOAL/OBJECTIVE 6

Construction Administration always plays a major role in the Thrasher full-services package. This is a piece that we feel is important to offer for every project, and we consistently bid more projects than any other firm in the state. Thrasher has the competent professionals your team needs to ensure your project is constructed correctly and functions as designed.



Thrasher has an internal Quality Control Policy Plan to ensure our projects move forward efficiently and effectively. The objectives of this manual are to continually improve the quality of the design and technical deliverables Thrasher provides to its internal and external clients.

This manual illustrates the basic requirements for quality control in our projects. It describes the methods for checking and reviewing product elements and client deliverables and includes rigorous comprehensive written check-lists for each stage of the design process, document production, and construction activities.

The purpose of these QC methodologies is to reduce or eliminate the potential for errors, omissions, ambiguities, and inconsistencies.

### The policy outlines three main areas:

- > **General** - Defines the purpose, intent and limitations, definitions, and Implementation
- > **Project Management Procedures** - Presents required procedures specific to this practice that allow for the efficient and accurate management of projects
- > **Check and Final Review Procedures** - Presents required procedures specific to this practice that are used to insure technical accuracy of the work product



Cost is a concern in every project and one that we take seriously – it is important to us that we provide a transparent, thorough look at what it will take to get your project completed. To make sure that happens, we follow four important principles:

**Thorough construction documents** - Starting off with detailed construction documents helps the entire project run more smoothly. By laying an accurate, realistic picture at the beginning of the process, we are able to complete your project more efficiently and with fewer change orders.

**In-depth review process** – The Thrasher team participates in an in-depth review process to ensure there is a thorough understanding of your project. Our construction administration team visits your site in person so we know exactly what is needed for the space.

**Understanding of what things cost** - Thrasher has a knowledgeable construction administration team that understands what it truly costs to make things happen. Rather than relying on general industry standards, our Construction Estimator, Jim Decker, can tell you what something will cost in actuality. *Jim*, who has a contracting license, knows how to navigate both sides of a bid process and can deliver an accurate look at your project costs up front.

**Respect for your wallet** - We respect your business needs and work to ensure the lowest-cost options we can find. We also keep you updated of budget throughout the process: An initial construction cost will be calculated to reflect your budget, and construction cost estimates will be delivered with the drawings at the end of Schematic Design, Design Development, and Construction Documentation. Adjustments to size and/or quality will be made, as necessary, during each design phase to maintain your budget.

Communication throughout any project is a primary key to success. To that end, Thrasher will begin communication with the WV Army National Guard immediately upon notification of award and will maintain consistent lines of communication for the duration of the project. This will ensure all parties involved - owner, contractor, and engineer - will always be apprised of the project happenings.

The two main components of the project approach will be design and construction. Each will have its own plan for communication.

## Communication During Design

Prior to the initiation of design services, Thrasher's Project Manager, Jeff Gola will discuss preferred methods of communication with the National Guard's point of contact. Updates during the design phase can occur in numerous ways:

- > Weekly status updates via email
- > Weekly conference calls
- > Monthly progress meetings.

No matter the methods preferred, our project teams are well versed in keeping our clients abreast of project status. We can customize your project's communication plans to best fit your teams' wants and needs.

## Communication During Construction

Before construction begins, Jeff will again meet with the National Guard team to determine preferred communication tools for this phase of the project. Open, consistent communication will be paramount to keep the project on-time and within budget.

Additionally, Thrasher will conduct monthly progress meetings with the contractor, the National Guard, and key project stakeholders throughout the duration of the project. Meeting minutes will be distributed to all attendees and any other agents identified by the National Guard. Action items will be documented within the meeting minutes.

Throughout construction, Thrasher will have people on-site for project representation as well as material testing. Anytime a Thrasher employee is on site during construction, a field report will be prepared. Field reports will be reviewed by the engineering team and distributed to the WV Army National Guard construction representative on a weekly basis.

### **Camp Galilee Terra Alta Dam Improvements, Certification, and Inspection**

Thrasher initially provided Dam Inspection required by Dam Safety Compliance bi-annually. After the inspection was completed, our team discovered there were deficiencies that need repaired. Our design team provided a plan set to bring the dam back into compliance with dam safety regulations. We also completed inspections during the dam repair and the annual inspection after completion.



## Buffalo Lake Dam Dam Safety Inspection Rehabilitation Assessment

Thrasher conducted a dam safety inspection, rehabilitation assessment, rehabilitation plan, and Monitoring and Emergency Action Plan (EAP) for the Buffalo Lake Dam (WV03305).

Buffalo Creek Reservoir was originally designed and constructed during the late 1950's as a domestic water supply source for the Clarksburg Water Board. Our assessment determined that the lake had a normal pool elevation of 1018.5, covering a surface area of approximately 55 acres, with a storage capacity of 903 acre-ft. Although the maximum elevation of flow through the spillway could reach an elevation of 1028.5 ft., the top of dam elevation was only 1028.0. At maximum elevation, the pool surface area was 82.3 acres with a storage capacity of 1579 acre-ft. The spillway (ogee spillway) had a crest elevation of 1018.5 ft. with an 85 ft bottom width. Based off of the dimensions of the existing spillway, the approach depth was 10 ft. in height and had a design head of approximately 10 ft. Flow from the spillway travels down Buffalo Creek, under US Rt. 19 to its confluence with the West Fork River.



Our watershed hydrology and dam/spillway hydraulics analysis determined that the existing dam would only pass 58% of a PMP/6 hour design storm; therefore modifications to the existing dam/spillway would have to be made to safely pass the 70% PMP/6 hour design storm. In order to achieve that goal, Thrasher determined that the most efficient and economical solution would be to raise the dam to elevation and spillway to elevation 1031.0.

### Tygarts Valley Conservation District Engineering Assessment

Thrasher was contracted by the Tygarts Valley Conservation District (TVCD) to perform an engineering assessment (Phase - 1 of the Barbour County Water Resources Study) of potential dam sites in the immediate vicinity of Philippi, WV to serve as a supplemental source of drinking water for Philippi and the Barbour County area that it serves. Seven dam-sites were initially evaluated; however, only one (Little Laurel Run) meets all of the requirements of the TVCD. Major components of the engineering assessment for each site included development of watershed hydrology and hydraulics, impoundment sediment and water supply storage capacities, and determination of hazard classification.

The Thrasher team utilized the NRCS SITES computer program and NRCS Technical Release - 60 (TR-60) to evaluate each dam. The assessment investigation, findings, recommendation, preliminary quantity and costs estimates were presented to the TVCD as the Phase 1 Report.

Based upon the findings and recommendations in the Phase I Report, the TVCD directed Thrasher to develop a preliminary design (Phase II) of the Little Laurel Run Dam. We refined the parameters of the initial engineering assessment for this site in order to better define site conditions and to accurately assess its water storage capability.



Thrasher contracted with the (GeoNovell) to perform a dam foundation investigation in order to confirm suitability of the site as a water supply impoundment. We developed an investigation plan and coordinated the drilling and borrow pit with GeoNovell's geotechnical engineer. Evaluation of the site demonstrated that it is a suitable location and has sufficient storage capacity to meet the water supply objectives of the TVCD.

## City of Salem Upper and Lower Dog Run Dam

Thrasher first performed a dam safety inspection of the Upper Dog Run Impoundment for the City of Salem in July, 2008 and then a second inspection more recently on the Lower Dog Run Impoundment.

Results of the inspection of the Upper Dog Run facility revealed numerous concerns about the following:

- Erosion
- Vegetation
- Inadequate rock rip-rap protection
- Seepage into the inlet (riser)
- Obstructions in the outlet channel
- Obstructions in the outlet channel
- Undercutting of the outlet structure
- Displaced rock rip-rap in the outlet channel
- Scouring in the outlet channel

Based upon the initial review of the data plus on-site observations, we developed a straight-forward method for assessing existing conditions. Our strategy identified deficiencies relative to State Dam Safety criteria, hazard classification determination, assessment of rehabilitation needs, and development of a cost effective rehabilitation plan. Construction of the improvements were tied into the bidding process for the City's waterline replacement project, allowing for time and cost efficiencies.



During the dam safety inspection of the Lower Dog Run Impoundment, similar concerns were found. To bring the Lower Dog Run Impoundment into compliance, Thrasher had to design a new riser structure, modify and amend the axillary spillway. The Upper and Lower Dog Run Dam project was completed in 2016.

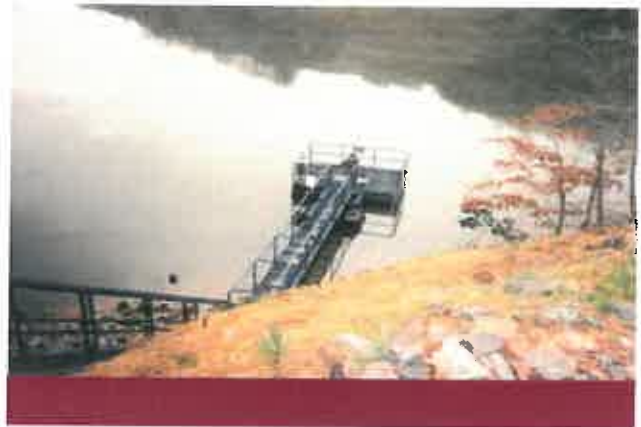


### City of Mannington Water Supply Dam - Huey's Run

The City of Mannington needed additional raw water supply, so an existing flood control dam was modified to raise the normal pool elevation by thirteen (13) feet.

A floating pump station was installed to transmit water approximately four miles to the City of Mannington's water treatment plant. The pumping rate was 350 gpm for 24 hours a day. This enabled the City of Mannington to lift a water curtailment on its customers.

This project was funded through the combination of a USDA-RUS loan and grant money..



### **City of Philippi - Flood Protection**

This project consisted of Geospatial Data collection of various drainage structures for the flood reduction project for the City of Philippi, West Virginia.

Mapping and Digital Geospatial Metadata Information was provided in the US Army Corps of Engineers format.



### **Town of Petersburg - US Army Corps of Engineers Flood Protection**

This project consisted of Boundary Surveys, Legal Description Writing, Flood Control Mapping, and GPS Control for Levee Projects consisting of roughly 200 acres and 20 property owners.

Mapping and Legal Descriptions were both prepared in the US Army Corps of Engineers format.



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