ORIGINAL

TERRADON CORPORATION

Engineering . Planning . Surveying . Environmental . Inspection

STATEMENT OF QUALIFICATIONS FOR PROFESSIONAL SERVICES FOR

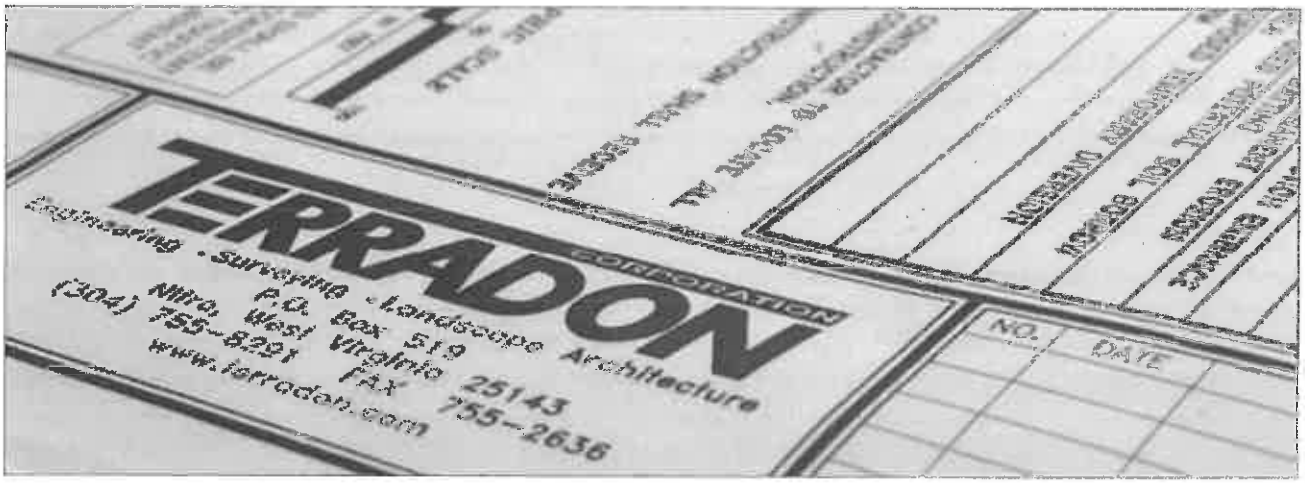
Watoga A/E Services

Riverside Campground Wastewater Plant

Presented to:

State of West Virginia, Department of Administration, Purchasing Division
PO Box 50130
2019 Washington St. E., Capitol Complex 1st Floor
Charleston, WV 25305-0130

June 16, 2016



Charleston, WV
(Corporate Office)
409 Jacobson Dr.
Poca, WV 25159
304-755-8291

Greenbrier Valley, WV
425 North Jefferson St.
Lewisburg, WV 24901
304-645-4636

Jackson County, WV
101 North Court Street
Ripley WV, 25271
304-373-1350

Fayette County, WV
P.O. Box 307
Charlton Heights, WV 25040
304-541-7655

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

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

Proc Folder: 214528

Doc Description: Watoga-A/E services Riverside Campground Wastewater Plant

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2016-05-09	2016-06-16 13:30:00	CEOI 0310 DNR1600000021	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

TERRADON Corporation
409 Jacobson Drive
Poca, WV 25159
304-729-9125

FOR INFORMATION CONTACT THE BUYER

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

Signature X Thomas G Kittredge FEIN # 55-0687626 DATE 06/16/16

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

ADDITIONAL INFORMATION:
Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for The Division of Natural Resources WVDNR, from qualified firms to provide architectural/engineering services to provide necessary engineering and other related professional services to design and provide construction contract administration services to replace a wastewater treatment plant at Watoga State Park as defined within the attached documentation.

INVOICE TO	SHIP TO
DIVISION OF NATURAL RESOURCES PARKS & RECREATION-PEM SECTION 324 4TH AVE SOUTH CHARLESTON WV25305 US	DIVISION OF NATURAL RESOURCES WEST VIRGINIA STATE PARKS 324 4TH AVE SOUTH CHARLESTON WV 25303-1228 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Wastewater engineering		

Comm Code	Manufacturer	Specification	Model #
81101527			

Extended Description :

A/E services for the replacement of the Riverside Campground at Watoga State Park.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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.

William S. Thornton, PS, PE, VP Civil Engineering
(Name, Title)

(Printed Name and Title)

409 Jacobson Drive, Poca, WV 25159
(Address)

304-755-8291 / 304-755-2636
(Phone Number) / (Fax Number)

will.thornton@terradon.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.

TERRADON Corporation, Inc.
(Company)

Thomas Y. Kittredge
(Authorized Signature) (Representative Name, Title)

Thomas Y. Kittredge, President
(Printed Name and Title of Authorized Representative)

06/16/16
(Date)

304-755-8291 / 304-755-2636
(Phone Number) (Fax Number)

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)

☐ Addendum No. 1	☐ Addendum No. 6
☐ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ 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.

TERRADON Corporation, Inc.

Company

Thomas J. Vitrella Jr.

Authorized Signature

06/16/16

Date

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

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: 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 exceed 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 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: TERRADON Corporation, Inc.

Authorized Signature: Thomas G Kitchedge Date: 6/6/2016

State of West Virginia

County of Putnam, to-wit:

Taken, subscribed, and sworn to before me this 6th day of June, 2016

My Commission expires August 13, 2019

AFFIX SEAL HERE

NOTARY PUBLIC Brenda Parsons

NOTARY PUBLIC OFFICIAL SEAL
BRENDA PARSONS
STATE OF WEST VIRGINIA
My Commission Expires
August 13, 2019
343 Meadow Dream Lane
Nitro, WV 25143

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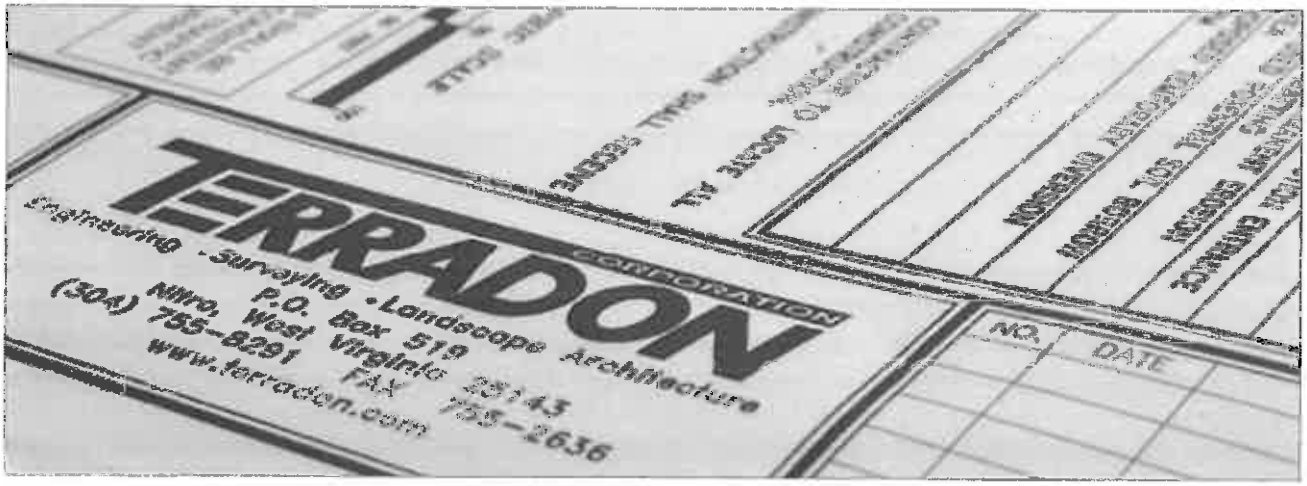

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Charlton Heights, WV 25040
304-541-7655

ALL LOCATIONS Phone: 304.755.8291 Fax: 304.755.2636
www.terradon.com

TERRADON CORPORATION

TABLE OF CONTENTS

I. QUALIFICATIONS

TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For more than 25 years TERRADON staff has provided a wealth of engineering solutions blanketing the Appalachian and Mid-Atlantic region with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today.

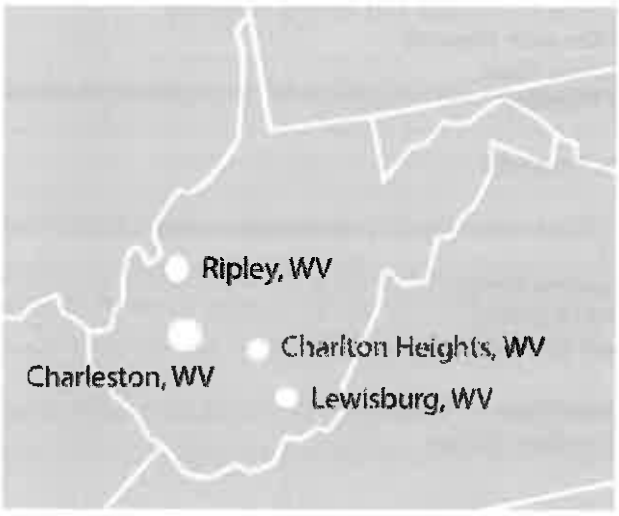
The second-generation, family-owned business has built a strong reputation by providing flexible, cost effective design solutions and maintaining the highest level of customer service. The firm has been recognized through numerous awards from professional organizations and agencies including the American Society of Civil Engineers, State Highway Departments, the Department of Environmental Protection and the American Institute of Architects.

TERRADON's corporate culture promotes innovation and progressive thinking. Project leaders strive to sustain customers through a wide-range of engineering offerings. TERRADON employees understand the purpose behind their services and work to cultivate lasting relationships with clients through honest, hard work.

TERRADON is the largest woman-owned engineering firm in West Virginia. TERRADON is a certified Women's Business Enterprise as defined by the Women's Business Enterprise National Council and the National Women Business Owners Corporation.

Certified WBENC Women's Business Enterprise

CERTIFIED Women Business Enterprise
National Women Business Owners Corporation



Locations

TERRADON maintains four WV locations: headquarters in Poca and offices in Lewisburg, Ripley and Charlton Heights. TERRADON's Poca, WV office is located within minutes of Hurricane, WV and equipped to meet any engineering design needs for this project.

I. QUALIFICATIONS

Wastewater, Water, Stormwater

Since 1989, TERRADON has provided planning, design and construction administration for millions of dollars worth of civil engineering projects including wastewater, water and stormwater improvement projects. Project experience is varied in both size and scope, ranging from small on-site systems to meet the requirements of schools and single-user site office buildings, to upgrades of major municipal facilities involving both new construction and the renovation of existing facilities. Key staff have more than 100 years of combined experience and have designed systems for both private clients and municipalities.

Wastewater

- Utility Planning and Layout
- Wastewater Treatment, Flow Equalization, Collection and Pumping
- Decentralized Sewer System Planning and Design/On-Site Wastewater System Design
- System Mapping
- Sewer System Infiltration and Inflow (I/I) and Sewer System Evaluation Surveys (SSES)
- Sewer System Rehab Design
- Operation and Maintenance Manuals
- Industrial Waste Treatment
- Sanitary Sewer Overflow (SSO) Abatement
- Asset Management Planning
- Combined Sewer Overflow (CSO) Compliance
- Hydraulic Modeling
- Mixing Zone Studies
- Permitting

Water

- Utility Planning and Layout
- Water Treatment, Storage and Distribution
- System Mapping
- System Modeling
- Drinking Water Backflow Prevention and Testing Programs
- Operation and Maintenance Manuals
- Source Water Protection Plans
- Asset Management Planning
- Permitting
- Backflow Prevention Programs

Stormwater

- Planning and Layout
- Stormwater Management Design
- System Mapping and Modeling
- Erosion and Sediment Control Plans
- MS4 Plans
- Stormwater Protection Plans
- Best Management Practices Design
- Permitting

I. Qualifications

Key Project Staff

William S. Thornton, PE, PS Project Manager

William S. Thornton, PE, PS is the former owner of Balance Consulting and has 20 years of managing various civil and transportation engineering projects. He will serve as primary point of contact for all work regarding this project and will attend all meetings of regarding this project once it begins and will continue to attend the meetings and provide status reports until all services are completed and the project is meeting all performance criteria.

Mike Pyles, PE Senior Project Engineer

Mike Pyles serves as a Senior Project Engineer for various civil and environmental engineering projects in the public and private sectors with emphasis on water and wastewater projects. He is responsible for engineering studies, design, contract documents, engineering analysis, computer modeling, regulatory compliance and permitting with emphasis on public utility systems. Pyles has served as Project Engineer on civil and environmental projects for State, County and City government clients since 1972. His keys areas of expertise include wastewater treatment plants, conventional and alternative sewer collection systems, water distribution systems, bridge scour analysis, hydraulic stream modeling, stormwater system design, construction plan/ specifications preparation and state/federal permitting.

Jim Nagy, PE Project Engineer

Jim Nagy performs Civil Engineering related to water and wastewater projects at TERRADON. He has more than 25 years of hands-on experience providing engineering for the largest private water company in West Virginia. He earned a B.S. in Civil Engineering from West Virginia University. His primary focus is on project management of water and wastewater projects. He also performs design work related to water distribution systems and sewage collection systems.

Lee Hale, PE Civil Engineer

Lee Hale serves as a junior Project Engineer for TERRADON wastewater and water projects. Hale has provided design support on some of TERRADON's largest and most recent projects. Working under the direction of senior leadership, Hale has provided design engineering for The Summit Bechtel Reserve, a 12,000-acre site with decentralized sewer and more than 100 miles of utilities. He is currently pursuing a Master of Science in Engineering with an emphasis in Environmental Engineering from Marshall University. Lee is proficient with computer modeling of water and wastewater systems using WaterCAD and designing stormwater management systems using SedCAD. He is also a skilled Civil 3D and Microstation user.

Robert Thaw, PS Survey and Mapping

Robert Thaw, Vice President of Survey and Mapping, oversees all TERRADON Survey services. TERRADON's survey group serves a diverse range of projects in support of seven TERRADON service groups in addition to managing survey-specific clients. Thaw manages a staff of Professional Surveyors and Computer Aided Drafting (CAD) designers who provide mapping, construction layout, ALTA survey, topographic survey and boundary survey services. Thaw's leadership has been instrumental in TERRADON's prioritization of the use of modern technology, ensuring clients the most efficient and accurate results. Additionally, he is responsible for in-house design of commercial property sites, parking and utility easements, and review of project plans and base mapping creation. Thaw's group also provides as-built surveys, utility identification surveys and deformation monitoring of design features such as retaining walls and dams.

II. TECHNICAL EXPERTISE

TERRADON's team of qualified professionals routinely provide professional services for various public and private utilities to plan develop, design and construct water and wastewater system projects. TERRADON employs more than 50 Professional Engineers, technicians, surveyors and support staff at its WV locations.

The WV Registered Professional Engineers in the Primary Office are:
- Joe Saunders, PE (Transportation and Structural)
- Jim Nagy, PE (Utilities)
- John James, PE (Geotechnical)
- Mike Pyles, PE (Hydraulic Design, Wastewater Treatment Process Design, Utility Design)
- Robert Simmons, PE (Civil)
- Ashley Lioi, PE (Civil)
- Lee Hale, PE (Civil Engineering)

The WV Registered Professional Engineer in the Charlton Heights Office is:
- Will Thornton, PE, PS (Civil)

The WV Registered Professional Engineers in the Lewisburg Office are:
- Phil Reed, PE, LEED Ap (Civil)
- Kristen McClung, PE (Hydrology and Erosion/Sediment Control)

The WV Registered Professional Engineers in the Ripley Office are:
- Jennifer Casey, PE (Civil)
- V. Grant Martin, PE, (Transportation)

Additionally, TERRADON maintains in-house staff for ancillary engineering-related tasks. Key personnel and their specialties include:
- Robert Thaw, PS (Survey and Mapping)
- Randy Melton, PS (Survey and Mapping)
- Dave Brown, PS (Right-of-Way, Survey and Mapping)
- Brian Bakanas, PS (Right-of-Way, Survey and Mapping)
- Bill Hunt, PG, LRS (Environmental Planning)
- Greg Fox, ASLA, LEED Ap (Grading and Site Design)

Software and Technology

TERRADON maintains the latest office management and design software available. The firm also utilizes a state-of-the-art secured network tied directly to the internet through a Metro E connection. For site design, civil and planning projects, the firm utilizes AutoCAD Civil 3D 2014 along with Land Desktop Companion 2014. For highway, roadway and structural projects, the firm uses Bentley MicroStation, Bentley InRoads, SAP2000, and MDX. This is the West Virginia Division of Highways preferred format. TERRADON's library of design software also includes SedCad & Pond Pack for erosion/sediment control, StormCAD & HydraFlow for drainage, WaterCAD for water distribution and management and FlowMaster for hydraulic calculations. TERRADON makes a significant investment in computers and related hardware. Our systems are consistently upgraded or replaced to maintain highly efficient CAD stations. HP8000 laser printers located conveniently to the design stations provide quick 11x17 proof plots for designers. TERRADON uses the latest HP Design Jet plotters to provide the highest quality prints of plans available. TERRADON Corporation also implements the use of a proprietary software call TEAM CENTER, allowing its engineers to efficiently share project documents with clients through secure FTP access with strict security access. Clients are invited to view the project repository through a hyperlink provided in an email. In a two-step process, clients simply click the link provided in the email, create a username and password and they enjoy access to drawings and related projects materials within seconds.

II. TECHNICAL EXPERTISE

CONSTRUCTION INSPECTION & MONITORING

TERRADON offers construction inspection and monitoring, and materials testing services to document compliance with project design specifications and regulatory requirements. The firm provides construction monitoring for utility, highway, and commercial construction projects. TERRADON also provides laboratory and field testing of construction materials. Engineers and technicians at TERRADON are West Virginia Department of Highways certified in Portland Cement Concrete, Hot-mixed Asphalt, Compaction and Aggregates.

Materials Testing & Inspection Services Include:

- Slump of Portland Cement Concrete (AASHTO-T119)
- Air Content of Freshly Mixed Concrete (AASHTO-T196 and T152)
- Unit Weight and Yield (AASHTO-T121)
- Making and Curing of Concrete Test Specimens (AASHTO-T23)
- Compressive Strength of Concrete Specimens (AASHTO-T22)
- Fine and Course Aggregate Gradations (AASHTO-T11 and T27)
- Specific Gravity of Aggregates (AASHTO-T84 and T85)
- Atterberg Limits (ASSHTO-T89 and T90)
- Moisture Content of Soil (ASTM-D2216)
- Nuclear Compaction Testing of Soil, Stone, and Hot Mixed Asphalt
- Preparation of Certification Forms and Construction Reports

The following is a short listing of construction inspection experience:

- Montgomery Sewer and Wastewater Treatment Plant Upgrades (3 projects)
- National Park Service: Nuttalburg Town Reconstruction
- National Park Service: Mammoth Caves - Access Improvement Project and Hotel Renovation
- Brookfield - Hawks Nest Dam stabilization
- West Virginia American Water Company - Various waterline extension and replacement projects throughout West Virginia
- CRH#8 Housing project – sanitary line installation inspection
- ECA Office building sanitary line installation inspection
- Summit Bechtel Family Reserve –
  - Multi-shift construction observation and compaction testing for soil placement and excavation activities
  - Concrete testing
  - Drainage installation Construction Observation
  - Gradation Testing and Construction Observation for Stone Placement
  - Utility Installation Construction Observation
  - On-site Sewage Holding and Disposal Systems Inspection
  - Road Construction Inspection and Testing
  - 2009 IBC Special Inspections at the Logistics Center Warehouse, Treehouse, Visitor's Center and Zip Lines
  - Northern Wayne County PSD Sewage Force Main Replacement Project

II. TECHNICAL EXPERTISE

UTILITY DESIGN, CONSTRUCTION MONITORING AND INSPECTION, LAND DEVELOPMENT/SITE DESIGN

The Summit Bechtel National Scout Reserve

TERRRADON Corporation was heavily involved in the development of the Summit as a consultant to Trinity Works. The Summit is a 10,600+ acre outdoor adventure center owned by the Boy Scouts of America and located near Mt. Hope, WV. From the initial site selection to surveying, planning, infrastructure design and inspection, TERRADON was a key player in creating one of the highest-profile design and construction endeavors in West Virginia. Working under tight specifications and time restrictions, TERRADON spearheaded the delivery of quality results.

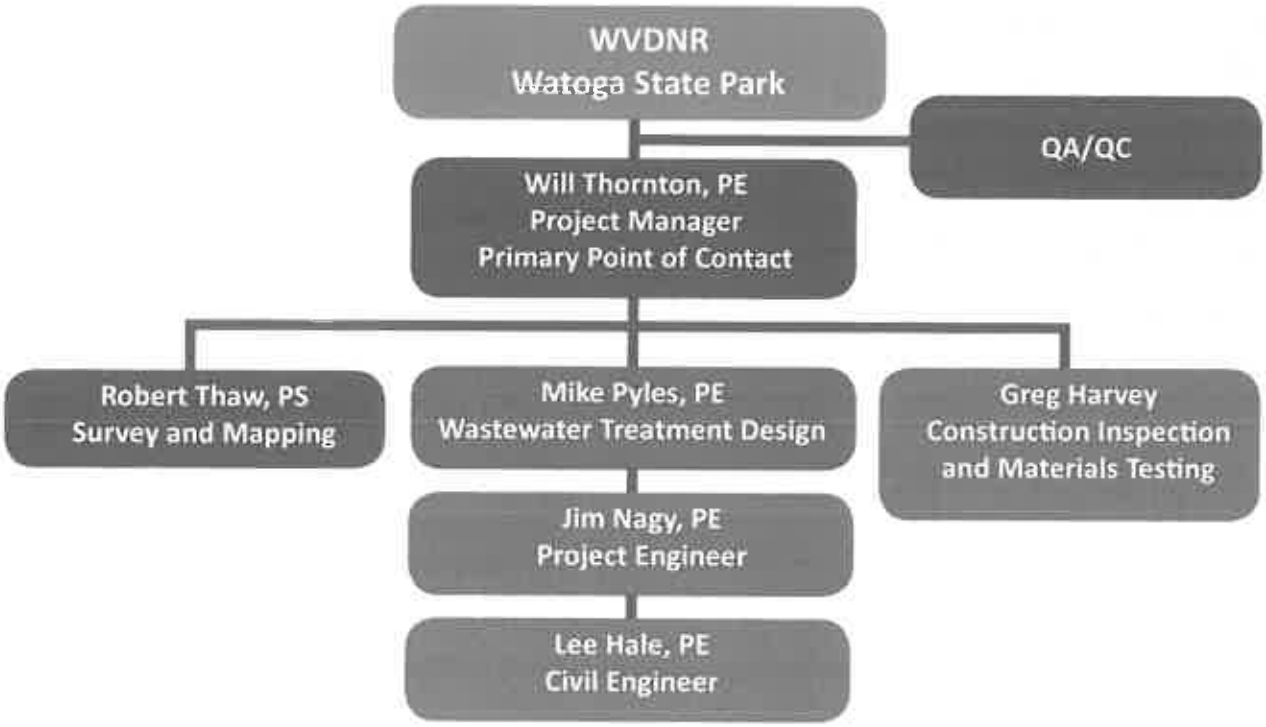
- Initial Site Selection/Conceptual Designs
- Site Planning/Grading
- Erosion and Sediment Control
- AML Reclamation for use as the main site access road system
- Survey/Mapping
- All Environmental Permitting
- Geotechnical Engineering
- Materials Testing and Construction Monitoring
- Utility Design (Water and Wastewater)
- 60+ miles of underground utilities including electrical conduit and natural gas
- 550,000 tons of aggregate produced by on-site rock crushing 600 acres of clearing, grubbing and rough grade operations
- 3 million cubic yards of excavation
- 600 acres of fine grading and revegetation
- 28 miles of drainage swales, including erosion and sediment control
- 14 miles of new roads (grade and drain)
- 4 earthen dams
- 80,000 seat lawn amphitheater
- Construction Observation and QA/QC testing.

III. MANAGEMENT & STAFFING CAPABILITIES

TERRADON Corporation maintains sufficient full-time staff in order to complete quality projects in an efficient and timely manner. The company maintains staffing protocols in order to supplement staff should project demands increase. At present time, TERRADON has adequate staff in-house to manage and complete project tasks in relation to this contract.

TERRADON engineers have numerous resources within the company to draw on, such as surveying, geotechnical engineering, environmental engineering, landscape architecture, materials testing, and construction monitoring. This allows the project manager to control all phases of the design process, from initial site reconnaissance through construction.

Proposed Organizational Chart



IV. REFERENCES

City of Montgomery
304-442-5181
Contact: Michael Giannini, General Manager
Contact: James F. Higgins, Jr., Mayor

Northern Wayne PSD
304-523-1070
Contact: Ron Terry, Chairman
Contact: Blaine Cyrus, General Manager

West Virginia American Water
304-340-2974
Contact: Brett Morgan, P.E., Engineering

Putnam County Commission
304-586-0201
Contact: Brian Donat, County Manager

Boy Scouts of America
304-646-2312
Contact: Rob Ridgeway, Project Director

City of Smithers
304-442-5282
Contact: Thomas Skaggs, Mayor

V. PRIOR EXPERIENCE

Wastewater Treatment Process Design Experience

The proposed TERRADON Team includes highly experienced wastewater treatment process design engineers and technicians with a broad experience in wastewater treatment system design. The Team experience ranges from wastewater treatment plants of less than 10,000 gallons per day to serve a single school, to a 14 million gallons per day wastewater treatment facility that serves 24,500 customers. The proposed TERRADON Team has designed numerous wastewater treatment plant projects. The latest project involved the upgrade of the City of Montgomery wastewater treatment plant to include improved sludge digestion/holding tank, a belt filter press building and press, and the addition of a fine screen at the head of the plant.

Mike Pyles, PE will lead the process design team assisted by Jim Nagy, PE and Lee Hale, PE. The following is a brief summary of the wastewater treatment plant projects designed by this proposed Team:

Mike Pyles, PE
Wastewater Treatment Plant Experience:

<u>City of Charleston, Kanawha County, WV</u>
Design Engineer for a 14 MGD Pure Oxygen wastewater treatment plant upgrade in two phases. The project received the 2005 Gold Award for Phase I and the 2008 Gold Award for Phase II from the WVACE.

<u>City of Montgomery, Fayette County, West Virginia</u>
Design Engineer for a 0.5 MGD innovative technology oxidation ditch treatment plant. The design included a stainless "boat" clarifier design, separate fine bubble aeration, and submersible mixers to allow control of dissolved oxygen and mixing independently.

<u>City of Philippi, Barbour County, WV</u>
Design Engineer for an oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface brush aerators, two circular secondary clarifiers, chlorine contact tank, sludge decant tank and sludge drying beds.

V. PRIOR EXPERIENCE

City of Logan, Logan County, WV
Design Engineer for an innovative oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface aerators, a stainless steel boat clarifier, chlorine contact tank, Sludge decant tank, and a belt filter press.

Town of Blacksville, Monongalia County, WV
Design Engineer for a small package wastewater treatment plant to serve a single commercial facility.

City of Ravenswood (Modification), Jackson County, WV
Design Engineer for improvements to the existing City of Ravenswood wastewater treatment lagoon system. The improvements included a new chlorine disinfection system to treat the effluent prior to discharge to the river.

City of Parsons, Tucker County, WV
Design Engineer for an aerated lagoon wastewater treatment system to serve the City of Parsons. The design included two aerated lagoon cells separated by curtain walls and a final detention cell prior to disinfection with chlorine.

V. PRIOR EXPERIENCE

Flatwoods-Canoe Run PSD Braxton County, WV
Design Engineer for an orbal oxidation ditch wastewater treatment plant. The design included a screen and grit removal system, and oxidation ditch with concentric channels, three secondary clarifiers, a chlorine disinfection system, and sludge drying beds. The plant serves the Towns of Sutton and Gassaway.

Union PSD - Cross Lanes, Kanawha County, WV
Design Engineer for the upgrade of two existing activated sludge wastewater treatment plants to serve the Cross Lanes areas near Nitro, WV. Upgrades included the conversion of one treatment plant from conventional activated sludge to contact stabilization and the construction of a sludge belt filter press system.

Lumberport PSD, Harrison County, WV
Served as design Engineer for a two cell aerated wastewater lagoon treatment system. The project included two separate pond cells, one aerated, and a disinfection system.

Shinnston PSD, Harrison County, WV
Design Engineer for an oxidation ditch treatment plant to serve Shinnston, WV. The design included screening and grit removal, an oxidation ditch with three surface aerators, two secondary clarifiers, a chlorine contact tank for disinfection, a sludge decant/holding tank and a belt filter press system.

V. PRIOR EXPERIENCE

Infiltration and Inflow Removal/Sewer System Evaluation Surveys

The TERRADON Team routinely provides engineering and technical services to municipalities and Public Service Districts to locate, evaluate, and remove sources of infiltration and inflow (I/I). The TERRADON Team has been involved in numerous projects that included mapping sewer systems, conducting flow metering with portable flow meters, smoke testing to locate sources of inflow, rainfall simulation using dyed water testing to confirm sources of inflow and infiltration, physical inspections of the sewer system to document manhole conditions and pipe conditions, and the development of plans for rehabilitation of the sewer system.

The typical approach taken by the TERRADON Team is to conduct a study to determine the condition of the sewer system, locate the sources of I/I, and determine the volume of I/I experienced under various conditions, such as dry weather and wet weather, and determine what portion of I/I can be cost-effectively removed and which portion, if any, is more cost-effective to continue to transport and treat. This approach provides the municipality with the lowest cost and least impact on sewer rates.

The following is a brief description of the TERRADON Team's experience in I/I and SSES Projects:

Towns of Sutton and Gassaway I/I Study. This study was conducted for the Flatwoods Canoe Run Public Service District as part of a regional wastewater collection and treatment project. Both the Town of Sutton and the Town of Gassaway were evaluated to locate sources of inflow and infiltration. Services included smoke testing, dyed water testing, flow metering, and manhole inspections to document the condition of the manholes. A report was prepared documenting areas that required rehabilitation which would, in turn, reduce the I/I that would be treated at the new wastewater treatment plant.

The City of Montgomery I/I and SSES Studies. The City of Montgomery did not have a composite sewer map of its system. This project included mapping the sewer system, dividing the sewer system into sub-drainage areas for flow metering, and conducting smoke testing and dye water testing to confirm sources of inflow. A cost-effective analysis was conducted to determine which portions could cost-effectively be removed and which portions should continue to be treated, which was followed by an SSES Study including closed-circuit television inspection of the sewer system and a sewer separation and rehabilitation plan was developed.

City of Montgomery I/I Continuing Study. TERRADON conducted smoke testing and a physical inspection of the western portion of the City to develop a sewer separation plan to remove inflow. This plan resulted in sewers being separated on Madison and Monroe Streets.

City of Smithers I/I Study. TERRADON conducted smoke testing and flow metering to locate potential sources of inflow in the Smithers sanitary sewer system to assist Smithers with compliance with its NPDES permit. The smoke testing project included a smoke testing report, a photo log documenting the location of each plume of smoke, and a map which was keyed to the photograph. Smithers continues to use these documents in removal of inflow sources located on private property.

V. PRIOR EXPERIENCE

Northern Wayne County Public Service District I/I Study. TERRADON conducted smoke testing and physical inspections of five subdivision sewer systems connected to the Northern Wayne County PSD collection system. The I/I study documented the condition of the existing sewer systems with photographs and maps, and set forth the basis for a rehabilitation plan, which was also developed by TERRADON. NWCPSD pumps all of its wastewater to the City of Huntington for treatment and disposal and pays for treatment for all water passing through a master meter at the Huntington wastewater treatment plant. Thus, removal of I/I saves NWCPSD thousands of dollars per year in treatment costs.

Sewer System Design Projects

The members of the TERRADON Team have been designing sewer line projects of all types for nearly 40 years. The projects designed by the Team vary in size and range from a large sewer systems with approximately 55 miles of sewer, to relatively short sewers serving small neighborhoods or schools. The most recent of these sewer system design projects was the Summit Bechtel Reserve wastewater collection system serving Fayette County's new home of the Boy Scout Jamboree. This project alone included the design of more than 92,700 linear feet of sewer system.

While TERRADON uses the latest computer-aided design software to assist with the design of sewer systems, the Team still approaches design "the old-fashioned way" by conducting extensive field investigations and walking the proposed route to make sure the sewer system is constructable. Preparing "desk-top" designs alone are not an acceptable design practice at TERRADON.

The Sewer System Design Team Leader will be Will Thornton, PE, PS. Thornton was retained by the Fayette County Commission to conduct a preliminary study of the cost of extending sewers from Ansted into Ames Heights, Chestnutburg Road, Gaymont Road, Hopewell, Russell Road, Shade Creek, and Turkey Creek and has already completed the preliminary general layouts for sewers in these areas and has provided the County with a head-start on work needed for a Preliminary Engineering Report to meet funding agency requirements for funding the sewer system extensions into these areas.

A brief listing of some of the TERRADON Team's extensive sewer system design experience is as follows:

City of Montgomery Sanitary Board, Morris Creek Sewer Extension Project

TERRADON engineers designed a sewer extension project which included approximately 12,000 linear feet of 8" gravity sewer to the City's landfill to collect leachate from the landfill following its closure. The project included a master metering manhole to meter the leachate flowing into the sewer. Approximately 35 homes were added to the City's system with this sewer extension project.

City of Montgomery Sewer Separation Project

This purpose of this project was to eliminate sources of inflow along Madison and Monroe Streets. TERRADON engineers designed a new sanitary sewer on Madison Street and the existing combined sewer was converted to a storm sewer. On

V. PRIOR EXPERIENCE

Monroe Street a new 30 inch diameter storm sewer was designed and the existing storm water catch basins were disconnected from the combined sewer system and connected to the new storm sewer, thus, eliminating the inflow originating from these two street and greatly reducing the inflow to the sewage treatment plant during periods of rain.

Summit Bechtel Family Reserve Wastewater Collection System

TERRADON engineers designed this alternative sewer system which is designed to serve 50,000 Boy Scouts and 50,000 visitors each day during the National Boy Scout Jamboree at the Summit Bechtel Family Reserve in Fayette County, West Virginia. The project was comprised of approximately 92,700 feet of sewer pipe and 125 large (6,000 gallons each) septic tanks, and 23 septic tank effluent pumping stations to convey the wastewater to an on-site sewage treatment facility designed by others. The sewer system collects the wastewater through a variable grade sewer system, while the septic tanks provide primary treatment of the wastewater.

Northern Wayne County Public Service District Sewage Force Main Collection Project

Northern Wayne County Public Service District discovered that their main sewage conveyance force main connecting them to the City of Huntington had deteriorated from hydrogen sulfide attack. TERRADON engineers designed an emergency by-pass pumping system to pump around the section of line to be replaced and designed a new 2,000 feet section of 16" sewage force main to replace the section that was deteriorated.

Sewer Line Extension Study, Fayette County, West Virginia

TERRADON and Balance Consulting teamed to conduct a preliminary sewer study for extending sewer service to the Ames Heights area, Turkey Creek area, Gaymont Road area, Chestnutburg Road area, Hopewell area, and Russell Road area of Fayette County with conveyance of the wastewater by gravity sewer to the City of Ansted. This preliminary study presented the preliminary construction cost to serve over 400 new potential customers. This information was then presented to the Infrastructure and Jobs Development Council (IJDC) to show feasibility for making the sewer extensions and to establish the need for a regional sewer project.

Charleston Renewal Housing (CRH #2 to CRH #5) Sewers

TERRADON Engineers designed the sanitary sewers to serve urban renewal projects scattered throughout the City of Charleston, West Virginia. A developer razed the dilapidated existing housing and constructed new, modern townhouses to provide an urban update to these subsidized housing units. TERRADON provided the utility design, including sanitary sewers, for sites #2 through #5, each meeting the requirements of the City of Charleston and the City of Charleston Sanitary Board for connection to the city sewer system.

RELEVANT EXPERIENCE

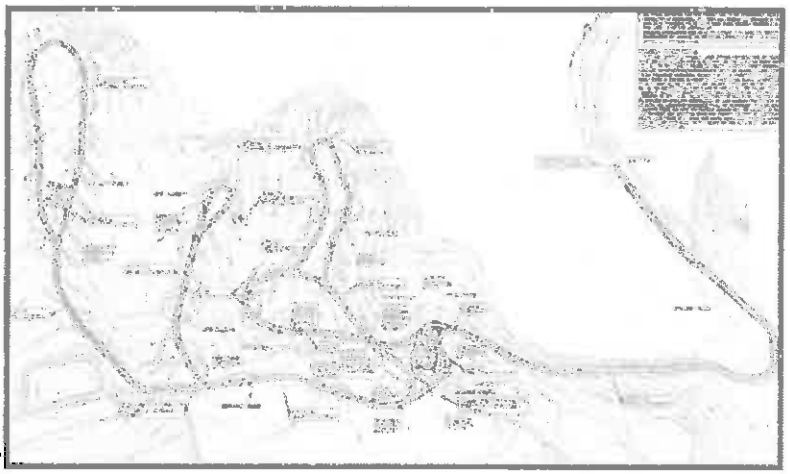
Bluestone State Park Master Planning

TERRADON was responsible for the development of a swimming pool replacement for existing pools at Bluestone State Park. The existing pool was located within the 100-year flood plain and subject to flooding.

TERRADON proposed a new pool located above the 100-year flood plain while incorporating many unique and creative design features for Bluestone State Park guests and the surrounding community.

Little Beaver State Park Design

TERRADON was responsible for the design of a campground expansion that doubled the number of existing full-service RV spaces, a new bathhouse and a trail system to the bathouse. TERRADON was also responsible for preparation of plans and specifications for a septic tank effluent gravity (STEG) system at the park. DNR Parks and Recreation had started the project using force account method of construction, but was unable to complete the project. Terradon designed the project to utilize materials already purchased and delivered to the site. The project consisted of septic tanks, one (1) grinder sewage pumping station, and small diameter gravity sewer (SDGS) with connection to the local PSD for treatment.



William S. Thornton, PE, PS
Vice President - Civil Engineering

Thornton is an experienced project manager and design engineer for civil engineering design projects. Thornton has more than 15 years of experience with consulting engineering in West Virginia, and three years with a construction firm performing major concrete paving projects in West Virginia, Pennsylvania and Ohio. Thornton also provided consultant review for the WVDOT, Division of Highways.

The major design projects with which he has been involved included roadway design, drainage design, site design, mine land reclamation, permitting, property surveys, airport design, Right-of-Way Services, maintenance of traffic and construction administration and oversight. He provides analysis and design on the construction and rehabilitation of a variety of infrastructure utilities (water, wastewater and stormwater), including streets, drainage, sidewalks, buildings, and traffic and other safety improvements.

Relevant Project Experience

- **Hammer Strait Bridge, Pendleton County, WV, 2015-1016.**
  Bridge Replacement over Trout Run in Pendleton County, WV.
- **District 2 Slides, Statewide, 2016.**
- Project Manager for the development of construction plans for 10 separate slide projects caused by April 2015 flooding events.
- **Waterloo Bridge, Mason County, WV, 2015-2016.**
- Bridge replacement and related design tasks for replacement of a bridge over Thirteen Mile Creek in Mason County, WV.
- **I-77 North Camden Interchange to Staunton Avenue Interchange-Wood County, WV, 2005.**
  Design included replacement and widening of interstate bridge over the Little Kanawha River and the replacement and widening of the bridge over Staunton Avenue. The roadway work includes widening of I-77 to eight lanes from Camden Avenue to Staunton Avenue.
- **Corridor H Section 7—Forman to Moorefield, Grant County, WV, 2003.**
  Design and management included five miles of new mainline four-lane highway, several side road connectors, truck brake check area, truck escape ramp, and a wetland overlook area including more than 8 Million cubic yards of earthwork.
- **I-79 Bridgeport to Meadowbrook- Harrison County, WV, 2004.**
  Included the widening of I-79 from two lanes North Bound and South Bound to four lanes North Bound and South Bound from Bridgeport to Meadowbrook Road including two sets of bridges.
- **Corridor H Davis to Bismark, Section 01 - Tucker County, WV, 2002.**
  Included design and management for upgrade of approximately two miles of WV 93 between Davis and Bismarck to a four-lane highway.

Education
B.S. Civil Engineering
West Virginia University
Institute of Technology

Work Experience
TERRADON Corporation
2014 - Present

Registrations
Professional Engineer:
WV PE [redacted]
OH PE [redacted]
VA PE [redacted]

Professional Surveyor:
WV PS [redacted]

Certifications
WVDOH - Portland Cement Concrete Technician
WVDOT - Asphalt Pavement Technician

Affiliations
ASCE: West Virginia Section, Past President; Charleston Branch, Past President
Fayetteville Rotary Club, President

WVDOH - Portland Cement Concrete Technician
WVDOT - Asphalt Pavement Technician

- **ODOT-Ashtabula Grade Separation, OH, 2002.**
  Design and management of a grade separation over two sets of railroad tracks with related approaches and utility relocation.
- **U.S. 52 Kermit Bypass-Mingo County, WV, 1998.**
  Included design and management of four miles of a new alignment four-lane expansion of U.S. 52 near Kermit, West Virginia. Design included more than 10 Million cubic yards of earthwork, two interchanges and a stream relocation.
- **U.S. 19 Corridor L Upgrade near Muddelty in Nicholas County, WV, 1995.**
  Design and management of approximately four miles of the expansion of U.S. 19 from 2 lanes to 4 lanes in Nicholas County. This fast track project was completed in nine months.
- **Meadowbrook Road (U.S. 19 End) in Harrison County, WV, 2000.**
  Design and management of new alignment of two miles of Meadowbrook Road in Harrison County. This four lane divided highway included a bridge over the West Fork River and an intersection with U.S. 19.
- **Mon-Fayette Expressway, 1998.**
  New four lane section of the Mon-Fayette expressway in Monongalia County.
- **WVDOH Master (On-Call) Engineering Services, 2000-2005.**
  Managed various highway, bridge, and related engineering services at locations throughout the state including:
  - Lavalette to Huntington Road Widening
  - Spencer Center Turn Lane
  - Church Street in Ripley Center Turn Lane
  - WV 14
  - WV 15 Intersection Upgrade.
- **Bridge and Roadway projects for which Thornton provided Project Management and QA/QC while at WV DOH Engineering Division, Consultant Review Section, are listed below. Typical services included project scheduling and tracking, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.**
  - **Ohio River Bridge, 2012.**
    Design study for a new Ohio River crossing near Weirton WV. Project included alignment studies, preparation of and Environmental Assessment document and coordination with stakeholders including local governments, public, US Corps of Engineers, FHWA offices in Ohio and WV, Ohio DOT
  - **I-79 Morgantown Interchange, 2013.**
    Design study for a new Interchange on I-79 in Morgantown. This fast track project included the preparation of an Environmental Assessment as well as developing alignments for a new interchange on I-79.
  - **Mineral Wells to Pettyville, 2012.**
    Design Study and Environmental Assessment for the extension of four lane roadway from Mineral Wells to Pettyville. Typical services included project scheduling and tracking, attending public meetings, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.
  - **Nutter Farm Bridge Road, 2011.**
    Construction plans for new roadway and intersection with US 50 to allow the removal of the existing Nutter Farm bridge

Appointments
City Engineer, Montgomery
2001 - Present

City Engineer, Smithers
2005-Present

Sanitary Board, Montgomery
2001-Present

Building Commission, Smithers
2010-Present

Fayette County Urban Renewal Authority
2012-Present

Advisory Board, Bridge Valley CTC, Drafting & Design Program

- **Blandville Bridge, 2011.**
  Construction plans for the replacement of existing bridge and approach roadway.
- **Camp Creek Bridge, 2011.**
  Design Study to replace the existing bridge in Clay County.
- **Burlington Mill Creek Bridge, 2010.**
  Design study to select preferred option to replace the existing bridge.
- **US 220 Passing Lane, 2012.**
  Construction plans for the addition of a passing lane on US 220. Typical services included project scheduling and tracking, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.
- **Bartley Branch Bridge, 2012.**
  Construction plans for the extension of new roadway alignment to allow the removal of a structure.
- **Hartland Bridge, 2012.**
  Construction plans for the replacement of existing bridge over the Elk River and approach roadway.
- **Fourth Street Bridge, 2013.**
  Design Study and Construction plans to replace the existing Fourth Street bridge with a new structure and roadway at Third Street in Fairmont. This project included coordination with City of Fairmont officials as well as the local public.
- **Jefferson Avenue Bridge, 2011.**
  Construction plans for the replacement of existing bridge in Point Pleasant.
- **Jefferson Avenue Extension Bridge, 2012.**
  Construction plans for the replacement of existing bridge in Moundsville.
- **Monument Place Bridge, 2012.**
  Design Study for the rehabilitation of the oldest stone arch bridge in WV.
- **Pleasantview Bridge, 2010.**
  Construction plans for the replacement of existing bridge.
- **Swago Bridge, 2010.**
  Construction plans for the replacement of existing bridge in Pocahontas County.
- **VA Hospital Bridge, 2010.**
  Construction plans for the replacement of existing bridge in Clarksburg.

Robert Thaw, PS
VP - Survey and Mapping

With more than 30 years of experience in a wide range of surveying projects, Robert Thaw serves as head of TERRADON's Survey and Mapping department. He organizes and supervises survey crews, reviews project plans, and creates base mapping for various projects including noise barriers, interchanges, connectors, bypasses, sidewalks, bike paths, and bridges. Thaw oversees all TERRADON survey activities, including: preparation of Right-Of-Way plans; the development of GPS static networks for aerial mapping in the design of roadways; identification of existing utilities and property lines; base image development and control placement for construction projects; and drafting of legal descriptions for ROW parcels.

Thaw has been directly responsible for survey and mapping services, including Right-Of-Way, on a number of notable transportation projects including:

- **Laurel Fork Campground Bridge**
  TERRADON provided surveying and design engineering on a USDA Forest Service project in Randolph County, West Virginia. Surveyors led by Thaw provided Right-Of-Way services, including courthouse research, construction easements, and location of alignments. Additionally, provided topographic mapping, project control for construction, hydraulic cross sections, and stream profiles.
- **Sedalia Arch Bridge**
  Thaw oversaw survey services for the replacement of an existing concrete arch bridge with a 72' single span bridge. The bridge consisted of adjacent concrete prestressed box beams with a cast-in-place concrete deck. Survey services consisted of a topographic survey, ROW plans, construction control, and legal description creation. Roadway design consisted of new bridge approaches and a designed detour. Drainage, maintenance of traffic, and right-of-way plans were included in the scope of work.
- **Sleeth's Run Bridge**
  Thaw provided Right-Of-Way services during the design for the replacement of an existing truss bridge in Lewis County, WV. The project included the design of a new 200' structure and approaches. Survey services consisted of a topographic survey, ROW plans, construction control, and legal description creation.
- **Grade Road**
  Thaw oversaw Right-Of-Way services for the new construction of two lanes adjacent to an existing two-lane roadway. Right-Of-Way services included Right-Of-Way Plans, legal descriptions, and questionnaires for take parcels.
- **St. Mary's Bypass**
  Working for the WVDOT, Thaw led transportation survey services for the relocation of WV 16 in Pleasants County, from Pleasants County Route 18 to WV 2 in Saint Mary's, West Virginia for approximately two miles of highway. The project included topographic mapping, survey control mapping, right-of-way and utility cost estimates, and inventories.

Education
A.S., Survey Technology, 1981,
West Virginia University Institute of Technology

B.S., Surveying, 1985,
West Virginia University Institute of Technology

Work Experience
TERRADON Corporation
1994-Present

Bowman Land Surveying
1992-1994

Dunn Engineers
1990-1992

Kelley Gidley Blair and Wolf
1988-1990

Pierson & Whitman
Architects and Engineers
1984-1986

Registrations
Professional Surveyor,
West Virginia

Mike Pyles, PE
Senior Project Engineer/Process Designer

Mike Pyles, PE is a Senior Project Engineer and Process Designer for various civil and environmental engineering projects with emphasis on water, sewer and transportation projects. He is responsible for engineering studies, design, contract documents, engineering analysis, computer modeling, regulatory compliance, and permitting with emphasis on public water and sewer systems.

Relevant Project Experience

- **Relocated WV 35, Putman County, WV**
  Design engineer for the waterline relocation on a WVDOH roadway project. The project tasks also included the preparation of the plans and preparation of the West Virginia Department of Health permit application.
- **North Mineral Wells Relocated WV 14, Mineral Wells, WV**
  Design engineer for the waterline relocation on a WVDOH roadway project. The project tasks also included the preparation of the plans and preparation of the West Virginia Department of Health permit application.
- **Relocated U.S. Route 58, Carroll County near Hillsville, VA**
  Design engineer for the waterline relocation on a VDOT roadway project. The project tasks also included the preparation of the plans and preparation of the Virginia Department of Health permit application.
- **North Cabell County Phase II and IV Waterline Extension, WV**
  Design Engineer for a waterline extension to serve additional customers for the American Water Company.
- **Turkey Creek Waterline Extension, WV**
  Design Engineer for a waterline extension to serve additional customers for the American Water Company.
- **Newhouse Drive Waterline Extension, WV**
  Design Engineer for a waterline extension to serve additional customers for the American Water Company.
- **Flatwoods-Canoe Run PSD Braxton County, WV**
  Design Engineer for an orbal oxidation ditch wastewater treatment plant. The design included a screen and grit removal system, and oxidation ditch with concentric channels, three secondary clarifiers, a chlorine disinfection system, and sludge drying beds. The plant serves the Towns of Sutton and Gassaway.
- **City of Charleston, Kanawha County, WV**
  Design Engineer for a 14 MGD Pure Oxygen wastewater treatment plant upgrade in two phases. The project received the 2005 Gold Award for Phase I and the 2008 Gold Award for Phase II from the WVACE.
- **City of Montgomery, Fayette County, West Virginia**
  Design Engineer for a 0.5 MGD innovative technology oxidation ditch treatment plant. The design included a stainless "boat" clarifier design, separate fine bubble aeration, and submersible mixers to allow control of dissolved oxygen and mixing independently.

Education
A.S. Mining Engineering Technology,
West Virginia University Institute of Technology

B.S., Civil Engineering,
West Virginia University Institute of Technology

M.S. Engineering,
Marshall University

Work Experience
TERRADON Corporation
2009-Present

HNTB Consulting Engineers
1997-2009

Kelley Gidley Blair & Wolfe, Inc.,
Consulting Engineers
1986-1997

WV Department of Natural Resources
1978-1986

WV Department of Highways
1973-1978

Registrations
Professional Engineer,
West Virginia

- **City of Philippi, Barbour County, WV**
  Design Engineer for an oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface brush aerators, two circular secondary clarifiers, chlorine contact tank, sludge decant tank and sludge drying beds.
- **City of Logan, Logan County, WV**
  Design Engineer for an innovative oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface aerators, a stainless steel boat clarifier, chlorine contact tank, Sludge decant tank, and a belt filter press.
- **Town of Blacksville, Monongalia County, WV**
  Design Engineer for a small package wastewater treatment plant to serve a single commercial facility.
- **City of Ravenswood (Modification), Jackson County, WV**
  Design Engineer for improvements to the existing City of Ravenswood wastewater treatment lagoon system. The improvements included a new chlorine disinfection system to treat the effluent prior to discharge to the river.
- **City of Parsons, Tucker County, WV**
  Design Engineer for an aerated lagoon wastewater treatment system to serve the City of Parsons. The design included two aerated lagoon cells separated by curtain walls and a final detention cell prior to disinfection with chlorine.
- **Union PSD - Cross Lanes, Kanawha County, WV**
  Design Engineer for the upgrade of two existing activated sludge wastewater treatment plants to serve the Cross Lanes areas near Nitro, WV. Upgrades included the conversion of one treatment plant from conventional activated sludge to contact stabilization and the construction of a sludge belt filter press system.

Jim Nagy, PE
Senior Engineer

As a Senior Engineer at TERRADON, Jim Nagy's primary focus is on designing civil engineering projects for public and private development projects throughout West Virginia. Nagy specializes in the design of water distribution systems as well as sewage collection systems. Nagy offers decades of hands-on experience and has previously provided design engineering services for schools, commercial developments, residential developments, public utilities and more. He earned a B.S. in Civil Engineering from West Virginia University and is a Professional Engineer in the State of West Virginia.

Relevant Project Experience

- **SPCC Planning -** updated SPCCs for All Crane & Equipment Rental and Spirit Services, Inc.
- **School Projects** - Responsible for layout, design, and permitting of water and sewer lines for numerous school projects in WV. Projects entailed coordination with PSDs, municipal water and sewer departments, State and Federal regulatory agencies for design of facilities. Schools include: Blue Ridge Community and Technical College, Blue Ridge K-12, Burnsville Elementary, Flatwoods Elementary, Davis Elementary, Sutton Elementary, Little Birch Elementary, Frametown Elementary, Buffalo High School, Clay-Battelle High School, Confidence Elementary, Jefferson Elementary, East Hardy High School, Eastwood Elementary, Flinn Elementary, Geary Elementary, Gilbert High School, Greenbrier West high School, Hampshire High School, Harpers Ferry High School and 19 additional schools.
- **Commercial Developments -** Responsible for layout, design, and permitting of water and sewer lines for numerous commercial developments in WV. Projects entailed coordination with PSDs, municipal water and sewer departments, State and Federal regulatory agencies for design of facilities. Developments include: Fairmont Federal Credit Union, Allegheny Energy Union (Fairmont), First Ward (Clendenin) Apartments, Milton Crossing, Tri-State Hotel and multiple convenience store sites throughout WV.
- **Charleston Replacement Housing** - Utility design, primarily water, sewer and stormwater, and coordination of overall site activities with the project developer for multi-unit housing development. Each phase entailed the design and layout of several hundred feet of water, sewer and stormwater line, including multiple connections with the utility providers, i.e., the Charleston Sanitary Board and West Virginia American Water, and applicable permit applications. Also responsible for construction monitoring and provision of as-built drawings as required by the respective utility providers.
- **Cathcart – Devonshire Development, Scott Depot, WV** - Designed sanitary sewer and water distribution system to serve more than 900 housing units in this private development.
- **Washington Woods Subdivision, Ravenswood, WV** - Designed more than 9,000 feet of water and sewer line and a 500 gpm fire pump water booster station to serve a 150 lot subdivision.
- **Sawmill Village, Snowshoe, WV** - Designed approximately 2,800 feet of 8" water line and sanitary facilities to serve the Sawmill Village development project in Snowshoe, WV.

Education
B.S. Civil Engineering
West Virginia University

Work Experience
TERRADON Corporation
2007-Present

WV American Water
1991-2007

AWW SC
1984-1991

WV DNR
1982-1984

VTN, Inc. Consulting Engineers
1978-1982

J.H. Milam Consulting Engineers
1977-1978

WV DNR
1976-1977

WV Department of Highways
1975-1976

Registration
Professional Engineer: WV

- **Cabell County Water Main Extension Project** - Worked on design and layout of approximately 46,000 feet of water main for the Salt Rock PSD/WVAW. Responsible for bidding, contract award, and project management.
- **Putnam County Water Main Extensions** - Worked on design and layout of approximately 63,000 feet of water main and a booster pumping station for the Putnam County Commission/WVAW. Responsible for bidding, contract award, and project management.
- **Manila Ridge Water Main Extension Project** - Worked on design and layout of approximately 38,000 feet of water main for the Putnam County Commission/WVAW. Project has not received funding yet. However, will be responsible for bidding, contract award, and project management.

Lawrence E. "Lee" Hale, PE, M.Sci.
Civil Engineer

Lee Hale is a Professional Engineer with 6 years of design and management experience. He has provided engineering design on some of TERRADON's largest projects since 2010.

He has provided engineering services for highway projects including structural design for bridges, drainage design on highways, and provided value engineering services for bridge designs. Hale has also designed municipal waste water treatment plant components and collection systems, improving efficiency on these systems. He has a Master of Science degree in engineering focusing on environmental engineering from Marshall University.

Relevant Project Experience

- **The Summit Bechtel Family National Scouting Reserve** - Tasks performed included water distribution system design, wastewater collection and pumping design, storm-water management design, WVDEP environmental permitting, wetland mitigation design, AutoCAD Civil 3D design team management, initial utilities start up disinfection plan, and field inspection of utility installation.
- **Bluestone Dam Structural Design** - Design Engineer for the Bluestone Dam Phase IV Construction team. Designs included components of a structural cantilevered steel framing anchored to the sloped downstream face of the dam that supports drilling operations for anchor installation including a 150 ton crane and design of hydraulic loadings on a barge platform system.
- **Dock's Creek Sewer Extension** - Lead design engineer for analysis and design of more than 20,000 ft. of gravity and pressure sewer lines. Project also consisted of a 78 horsepower primary pumping station. Project included correspondence with a $1M grand and other funding sources.
- **Goodwin & Goodwin, Attorneys at Law** - Tasks performed included several Phase I Environmental Site Assessments.
- **Waterloo Bridge Design** - Served as design engineer for the replacement of the bridge. Tasks included design of bearing pads, semi-integral and integral abutment design, concrete reinforcement design, design factor calculations, and drafting.
- **Portsmouth Bypass, Portsmouth, OH** - Served as Design Engineer for D two bridge for the proposed Portsmouth Bypass Design Build project. Tasks included assisting with the layout of new bridges, driven pile foundations, integral abutments, reinforced and un-reinforced elastomeric bearings, prestressed bulb "T" beams, and a 35' tall cap and column pier.
- **Hammer Strait Bridge** - Served as a Design Engineer for deck overhang design, superstructure cross-frame design, design factor calculations, drafting, among other components.

Education
B.S., Civil Engineering,
West Virginia University
Institute of Technology

Master of Science in Engineering
Environmental Engineering,
Marshall University

Work Experience
TERRADON Corporation
May 2010—Present

Wellspring Builder's Inc.
May 2006-August 2008

Registrations
Professional Engineer: WV

Affiliations
Charleston Main Streets
LEED Subcommittee, Chair

- **6th Avenue Pump Station Design, Montgomery, WV** - Tasks performed included site layout, new pressure and gravity sewer line design, pump design, back-up pump design (Dri-prime system), drafting, and the redesign of existing infrastructure.
- **Smithers PSD, Long-Term Control Plan** - Preparation a LTCP for the City of Smithers, WV, to address the requirements for the plan by the City's NPDES Permit.
- **Brown and Brown Law Firm** - Tasks performed included field sampling and report writing for Phase II Environmental Site Assessment.
- **T-Shirt International** - Tasks performed included wastewater discharge sampling and permitting.
- **Matheny Motors** - Task performed included Phase II Environmental Site Assessment monitor well installation and ground water sampling.
- **Catfish-Man-of-the-Woods Bridge, Cabell County, WV** - Served as a design engineer for the design on the replacement of the bridge. Tasks included assisting with the layout of the new bridge and roadway alignment, design of cantilever wing walls, drilled shaft foundations, semi-integral abutments, reinforced elastomeric bearings, spread prestressed box beams and concrete deck reinforcement, design factor calculations, and drafting.
- **City of Montgomery Wastewater Treatment Plant Improvements** - Design of overhead crane and pulley system for pump repair and installations.
- **Corridor H Drainage Design** - Drainage Design for four-lane highway, including culvert and inlet sizing, flow calculations.
- **Putnam County Commission** - Field Survey and Public Outreach for utility extension projects.
- **I-77 Three Twin Bridge Replacement near Tupper's Creek, WV** - Performed value engineering design to construction bridges in two phase construction method in lie of cross-overs.
- **Value Engineering for Sections 3 and 5 of Corridor "H", Tucker County, WV** - Aided in the design of roadway drainage, superelevations, and vertical geometry. I also provided assistance with plan and cross section review and quantities.

TERRADON CORPORATION

Gregory S. Harvey
Construction Manager

Greg Harvey is an experienced designer and construction manager for a wide variety of civil engineering projects. Major design and construction projects with which Harvey has been involved include water and sanitary system upgrades, buildings, roadway design, drainage design, site design, abandoned mine land reclamation, permitting, property surveys, construction administration and oversight.

Relevant Project Experience

- **I-64 Bridge Deck Rehabilitation - Charleston, WV** - WVDOH Construction Inspection on an $18 million project involving the rehabilitation of 19 bridges from the Fort Hill Bridge to Brooks Street in Charleston, WV
- **Hawks Nest Dam – Fayette County, WV -** Brookfield Renewable Energy: Site Manager during $11 million anchoring project, responsible for all aspects of the Construction Administration of the project including but not limited to Safety and Environmental requirements, onsite training, invoicing, quantities, management of inspectors and technicians, interaction with regulatory agencies (USACE, FERC, WVDEP). Project is expected to be completed in fall of 2014.
- **New River Gorge National River – Historic Nuttalburg Town Site – Fayette County, WV -** Stabilize Historic Mine Structures– Fayette County, WV. Construction Management Representative responsible for construction drawing and specification reviews, developing project cost estimates, coordinating and negotiating with Contractor, ensuring compliance with the construction drawings and specifications, keeping daily reports, coordination with the design engineer, contractor and National Park Service and verifying quantities and pay estimates.
- **City of Charleston Waste Water Project -Charleston, WV** - Resident Project Representative on $200+ Million sanitary sewer project, responsible for daily quantities, inspection, testing, interface between owner and contractor, change orders. Interpretation of drawings and specifications and assisted surveyor with reestablishing property corners.
- **City of Montgomery Waste Water System Improvements – Montgomery WV** Resident Project Representative Services during the construction phase of the 3 Construction Contracts of upgrades to the Montgomery Sanity Sewer Plant which included the construction of a 2-story building and the installation of a belt press system, storm and sanitary line construction and pump station upgrades.
- **Nuttallburg Phase 1 and 2 - Fayette County, West Virginia** - Construction Management services for the structural stabilization of a historic headhouse, tipple and conveyor system for the Department of the Interior, National Park Service. Total construction cost of both phases is $7.5 Million. Responsibilities included monitoring the Contractor's performance, evaluating work for compliance, reviews pay requests, processes RFIs, RFPs, and other submittals and assists with Contract Change Orders.
- **Runway Safety Area Extension – Yeager Airport, Charleston, West Virginia** - Quality assurance during the extension of the main runway (5-23) which included moving approximately 23 million cubic yards of earthwork and drainage improvements. Supervised four technicians performing quality control testing. Other responsibilities included compiling test results, daily reports and conducting progress meetings.
- **Airport Hanger Construction – Summersville Airport, Summersville, West Virginia** - Services included design and construction management for construction of new $2.5 Million 2- bay hanger building at Summersville Airport.
- **Environmental Remediation of a Contaminated Tributary of the Ohio River – Union Carbide/Dow Marietta Plant – Marietta, Ohio -** Construction management of a $40 Million remediation project which involved the removal of phenol and monochloric benzene from the stream and the construction of 4 hazardous landfills and stream bank stabilization. Coordinated with the US EPA, Ohio EPA and the plants industrial neighbors.

EDUCATION
B.S. Industrial Relations, 1995
West Virginia Institute of Technology

CERTIFICATIONS

TRET Level III Inspector WVDOH

Portland Cement Concrete Technician, WVDOH

Bituminous Concrete Technician, WVDOH

Aggregate Technician, WVDOH

Compaction Inspector, WVDOH

ACI Concrete Technician

OSHA HAZWOPPER

Corps of Engineers – Construction Manager

AFFILIATIONS
American Society of Civil Engineers (ASCE), Associate Member

- **City of Montgomery Sidewalk Replacement Project—Montgomery, West Virginia -** Responsible construction oversight services for the replacement of sidewalks throughout the City. Computed quantities and prepared closeout and processing documents for the WVDOH.
- **WVU Tech Drainage Phase 1 and 2 – Montgomery, West Virginia -** Design and construction management of the award winning remediation of deep mine drainage and stream remediation and relocation for the WVDEP Abandoned Mine Lands program.
- **Blazer Portals –Preston County, West Virginia -** Design and surveying for the remediation of 24 wet and dry portals for the WVDEP Abandoned Mine Lands program.
- **Town of Belle Storm and Sewer Line Upgrades – Belle, West Virginia -** Design and surveying for the remediation storm sewer and sanitary sewer lines throughout the Town of Belle.
- **Sewer Line Extension and Plant Upgrade – Branchland, Lincoln County -** Design and surveying for the extension of sewer lines, addition of pump stations and upgrades to the existing plant.
- **Racine Sewer Line Upgrade – Meigs County, Ohio -** Design and field investigation for the remediation of sewer lines throughout the Town.
- **S&S Landfill - Clarksburg WV (now owned by Waste Management) -** QA/QC and Inspection which included but was not limited to; Earthwork, Drainage, Concrete and HDPE Liner. The various projects included 3 new MSW cells and one cell that was tied into an existing cell. Total cost was approximately 9 million dollars.
- **Nicholas County Landfill - Craigsville WV -** Environmental Study for WV LCAP Program which included but was not limited to; Field work and Final report preparation.
- **Fayette County Landfill Closure - Cunard WV -** Design, QA/QC and Inspection which included but was not limited to; Earthwork, Drainage, Concrete and HDPE Liner. The Project was a landfill closure under WVLCAP program.
- **McDowell County Landfill Closure - McDowell County, WV -** Project Management/ Construction Management, Design, QA/QC and Inspection which included but was not limited to; Earthwork, Drainage, Concrete and HDPE Liner. The Project was a landfill closure under WVLCAP program.