



May 28, 2024

RECEIVED

2024 MAY 28 AM 11:35

WW PURCHASING  
DIVISION

Mr. Josh Hager  
c/o Department of Administration  
Purchasing Division  
2019 Washington Street, East  
Charleston, WV 25305-0130

**Re: North Bend State Park  
New Wastewater Treatment Plant**

Dear Mr. Hager:

Chapman Technical Group (CTG) is extremely interested in providing professional engineering services to the Division of Natural Resources for the above-reference project. We are an employee-owned engineering and architectural consulting firm with the ability to perform all the required work with our current experienced in-house staff.

Additionally, in late 2013, Chapman Technical Group joined GRW, a Lexington, KY-based A/E firm with eight (8) offices in four (4) states with nearly 200 professionals committed to serving our clients. GRW also has extensive experience in the water and wastewater fields, and this allows CTG to bring additional resources to our clients here in West Virginia.

For forty (40) years, CTG has provided design and construction services for public wastewater system improvement projects throughout West Virginia. Our experience with wastewater systems includes new construction, renovation, and rehabilitation of existing facilities, ranging from very small systems to larger systems serving over 100,000 people.

We will meet the following goals and objectives of the project:

2.1 We will review the conditions and operation of the facility to develop a plan to minimize disruption to the current operation of the facility/structures and meet all objectives.

2.2 We will provide all necessary services to design the facilities outlined in the EOI. Our design will adhere to the DNR requirements and objectives, as well as applicable laws and codes within the designated budget and timeline requirements.

2.3 We will oversee construction administration using the design professionals who designed the project, ensuring that the project is built and operates as intended.

Chapman Technical Group has the experience, technical qualifications, and commitment to client satisfaction needed to assist you with the successful completion of your project. Now being a part of GRW, we offer the resources of a national firm with the same local familiarity and personalized service we have provided for decades. We look forward to hearing from you.

Very truly yours,

**CHAPMAN TECHNICAL GROUP**

Robert G. Belcher, P.E.  
Senior Vice President

200 Sixth Avenue  
Saint Albans, WV 25177

304.727.5501

Buckhannon, WV  
Lexington, KY

[www.chaptech.com](http://www.chaptech.com)



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

State of West Virginia  
Centralized Expression of Interest  
Architect/Engr

Proc Folder: 1428290

Doc Description: A&E - North Bend State Park New Wastewater Treatment Plant

Reason for Modification:

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2024-05-09	2024-05-28 13:30	CEOI 0310 DNR2400000009	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000207246

Vendor Name : Chapman Technical Group

Address : 200

Street : Sixth

City : St. Albans

State : West Virginia

Country : USA

Zip : 25177

Principal Contact : Robert G. Belcher

Vendor Contact Phone: (304) 727-5501

Extension: 3125

FOR INFORMATION CONTACT THE BUYER

Joseph E Hager III  
(304) 558-2306  
joseph.e.hageriii@wv.gov

Vendor  
Signature X

FEIN# 550704766

DATE

5-28-24

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

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

(Printed Name and Title) Robert G. Belcher, PE, Senior Vice President

(Address) 200 Sixth Avenue, St. Albans, WV 25177

(Phone Number) / (Fax Number) (304) 727-5501/NA

(email address) gbelcher@chaptech.com

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract 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/Contract 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 this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; 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.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Chapman Technical Group

(Company)

(Signature of Authorized Representative)

Robert G. Belcher, PE, Senior Vice President

(Printed Name and Title of Authorized Representative) (Date)

(304) 727-5501/NA

(Phone Number) (Fax Number)

gbelcher@chaptech.com

(Email Address)

## ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.: CEOI 0310 DNR2400000009

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. 2
- ☐ Addendum No. 3
- ☐ Addendum No. 4
- ☐ Addendum No. 5

- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ 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.

**Chapman Technical Group**

Company



Authorized Signature

5-28-24

Date

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

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## North Bend State Park New Wastewater Treatment Plant



### Anticipated Concepts

Chapman Technical Group/GRW has extensive experience designing public wastewater systems throughout WV, KY, IN, and TN. We believe there are four primary aspects to this project.

First, the construction schedule would need to be coordinated to minimize service interruptions to the Park's facilities. Treatment will need to be provided during the entire construction period. The best option is to construct the new treatment plant adjacent to the existing treatment plant, if possible. Upon start-up of the new plant, the existing plant can be demolished. In addition to the benefit of a smaller footprint, a packaged and/or pre-cast wastewater treatment plant is ideal for shorter construction periods. This should help eliminate disruptions to the Park's facilities.

Second, there is often limited availability of free space for a new wastewater treatment plant, although there appears to be adequate space adjacent to the existing plant. Further investigation into the feasibility of relocating the plant, if needed, needs to occur early in the design phase.

The third issue is the sizing of the treatment plant and discharge permit. Review of recent water usage records will confirm sizing and potentially necessitate a wasteload allocation and discharge permit modification prior to construction.

The final issue concerns the life cycle cost of the replacement facility. Consideration should be given to minimizing the potential for corrosion thereby extending the life of the new facility. This can be accomplished by using alternate materials and keeping equipment from being exposed to the effects from corrosive gases. We will be glad to assist you with this analysis if desired.

# North Bend State Park

## New Wastewater Treatment Plant



### Plan of Approach

#### Planning and Design Phase:

- Meet with Owner and tour existing facilities.
- Determine and evaluate available options to replace the existing wastewater treatment facility.
- Meet with the WV BPH/ WV DEP as required on design and operating requirements for the proposed new facility.
- Present findings to the DNR with recommendations, costs (construction and total cost), and a schedule for completion.
- Obtain mapping of the site, survey if necessary.
- Prepare design set for the system improvements and demolition/removal of existing wastewater plant upon completion of construction, including plans, specifications, and bidding documents.
- Present plan set to the DNR and other agencies as required for approval.
- Design shall include the shutdown, decommissioning, removal, and disposal of the existing wastewater treatment plant according to regulations of the WVDEP.
- Design considerations for minimizing the effects of corrosion on the plant by considering alternate materials and locating equipment such that exposure to harmful corrosive sewer gases are minimized to increase the useful life of the replacement plant.

#### Permits, fees, and licenses as required:

- Assist with obtaining a Stormwater NPDES permit as required.
- Assist with WV BPH for Permit to Construct.

#### Bidding Process:

- Preparation of bid documents and assisting in the bidding process.
- Attend Pre-Bid Conference and provide any needed additional information for addenda as required.
- Assist with evaluation of bids submitted if required.

# North Bend State Park New Wastewater Treatment Plant



## Construction Administration:

- Construction time is usually established by the DNR and Engineer and can vary based on the complexity of the project and the time of year of award.
- A preconstruction meeting is held with the selected Contractor to go over all aspects of the construction. This meeting can include the DNR, Engineer, existing utility reps, and others.
- Prepare responses to Contractor questions (RFI process)
- Review Contractor submittals, process pay requests, etc.
- Conduct monthly progress meetings on-site.
- Our team would strongly encourage allowing the Engineer to provide full-time construction observation services during construction to provide greater assurance that the Contractor is performing the work in general conformance with all the requirements for the projects, including being the liaison between the DNR and Engineer to assist with resolving problems on site during construction, witness start-up and testing of the completed system and assisting with preparation of punch list items for any remaining work.
- When the project is functional, a Notice of Substantial Completion is issued to the Contractor which sets forth the beginning and end of the specified warranty period.

## Post Construction:

- A final walk through is made of the newly constructed project and a punch list of incomplete work is established and provided to the Contractor.
- Project design and construction is under warranty for one year unless DNR desires an additional warranty period.
- Construction red-line drawings prepared during construction are turned into Record Drawings (As-Builts) and presented to the DNR. This information will be provided in both hard copy and electronic format.



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## North Bend State Park New Wastewater Treatment Plant



### **Project Management**

The key to Chapman Technical Group's project control is the management of the entire project, from the first scope meeting to project closeout, by a single Project Manager. The Project Manager is the leader of the design team and is the single point of contact for the Division of Corrections. The Project Manager is most often the lead designer for the project.

During design, the Project Manager will document all design meetings and distribute meeting notes to all parties. During construction, the Project Manager will receive, document, process, and distribute submittals and shop drawings, as well as test results and construction observation reports. At the end of the project, the Project Manager will be responsible for coordinating all closeout requirements such as as-built drawings, operations and maintenance manuals, and project warranties.

### **Quality Control**

Chapman Technical Group's quality control strategy is two-fold. As noted previously we rely on a strong Project Manager to have a detailed level of knowledge of the project and act as a single point of contact for everyone involved in the project. This provides a clear line of communication among all parties that is crucial to the success of the project.

We provide all needed services, except geotechnical engineering, in-house with our highly experienced staff of civil, mechanical, and electrical engineers, as well as architects, surveyors, and technicians.

We also implement a peer review system for all work and all disciplines to ensure all design documents are as complete as reasonably possible. We are constantly exchanging ideas about projects to find the optimal solutions to various design challenges.

We have an outstanding reputation among contractors for developing complete and accurate construction documents which results in consistent bids and limited change orders.

# EXECUTIVE SUMMARY



Selecting a firm to provide professional services can be difficult in today's market. Many firms offer computer services and technical skills; however, Chapman Technical Group offers qualities that other firms may lack. Summarized below are the benefits of selecting Chapman Technical Group:

Since 1984, Chapman Technical Group has been responsible for the planning, administration, design, and construction of over \$500 million of water, wastewater, and stormwater system improvements projects throughout West Virginia involving both new construction and rehabilitation/renovation of existing facilities.

Chapman Technical Group's staff of nearly 30 personnel, including environmental, civil, structural, and electrical engineers, as well as architects, landscape architects, surveyors, technicians, and construction representatives are available to begin work immediately.

In late 2013, Chapman Technical Group joined GRW, a Lexington, KY based A/E firm with extensive resources in the municipal water and wastewater fields, an additional asset for Chapman Technical Group and our clients.

We are a true West Virginia firm, and our personnel have a wealth of experience in the potable water, wastewater, and stormwater fields in West Virginia, and are adept at dealing with the many challenges our unique terrain presents.

Most Chapman Technical Group employees are natives of West Virginia and are graduates of West Virginia colleges and universities.

Preparation of preliminary engineering reports and feasibility studies are frequent tasks that Chapman Technical Group regularly provides. Our experience in the water, wastewater, and stormwater engineering fields, our knowledge and experience with all funding agencies, and our working relationship with regulatory agencies all provide invaluable resources towards the successful development of any project.

Our reputation for providing innovative and cost-effective design solutions, our commitment to client satisfaction, and our proven track record in meeting schedules and budgets have all combined to make Chapman Technical Group the clear leader in the environmental engineering consulting field in West Virginia.

## COMPANY OVERVIEW



Established in 1984, Chapman Technical Group has steadily grown to a diverse firm of professionals, many of who were educated in West Virginia colleges and universities. We have achieved an outstanding reputation for providing high-quality design projects, while meeting client schedules and budgets and have received numerous awards for our work. In late 2013, Chapman Technical Group was acquired by GRW, a Lexington, KY based A/E firm, allowing us to provide a wider range of services while expanding our resources. We remain Chapman Technical Group, a wholly owned subsidiary of GRW, with offices in St. Albans and Buckhannon, West Virginia offering an extensive range of professional services.



*Chapman Technical Group offers a broad range of professional services.*

- Airport Design
- Architecture
- Civil Engineering
- Interior Design
- Landscape Architecture
- Recreational Facilities
- Roads, Highways, & Bridges
- Site Development
- Space Planning
- Surveying
- Water & Wastewater Systems
- Geospatial

## AWARDS



- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2018, First Place Water Resources Category for the City of Elkins Water Treatment Plant and Distribution Upgrade Project.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2012, Gold Award - Water & Wastewater Category for the Corporation of Shepherdstown Wastewater Treatment Plant Project.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2012, Gold Award - Transportation Category for the Appalachian Regional Airport Project, Mingo County.
- WINNER - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", WVDOT - DIVISION OF HIGHWAYS - 2017, Large Roadway Category for WV 10 So. Madison Branch to Gyandotte Bridge; 2014, Large Roadway Category for WV10 Rum Creek to Stollings; 2013, Small Roadway Category for Corridor H Paving WV 42/93 Interchange to 2.8 miles east WV 42/93; 2011, Large Roadway Category for WV10 North Davy Branch to Rum Creek; 2000: Large Bridge Category for WV10 Buffalo Creek Bridge, Logan County, West Virginia.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2009, Gold Award - Special Projects Category for the Mercer County Airport Runway Safety Area Project
- AMERICAN SOCIETY OF CIVIL ENGINEERS, 2009, National Superior Employer in the Private Sector Award.
- WV CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS - HONOR AWARD FOR EXCELLENCE IN ARCHITECTURE, 2008 - Upshur County Courthouse Restoration and Renovations.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2008, Bronze Award - Wastewater Category for the Spring Run State Fish Hatchery Improvements.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2007, Silver Award - Structures Category for the Mercer County Airport Runway Safety Area Project.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 2003, Gold Award - Water Treatment Category for the City of Fairmont Water Treatment Plant Project.
- FINALIST - "COMMISSIONER'S ENGINEERING ACHIEVEMENT AWARD", WVDOT - DIVISION OF HIGHWAYS - 1999: Large Roadway Category for WV10 Buffalo Creek - Taplin Project; 2000: WV10 Buffalo Creek - Huff Junction Project, both in Logan County, West Virginia.
- WV CHAPTER, AMERICAN COUNCIL OF ENGINEERING COMPANIES - ENGINEERING EXCELLENCE AWARD, 1999, Silver Award - Water and Wastewater Category, for the City of Beckley Piney Creek Wastewater Treatment Plant Project.
- ENTREPRENEUR OF THE YEAR AWARD - FINALIST, 1999 and 2000, Sharon L. Chapman, President, was named one of twenty finalists in the West Virginia Area Entrepreneur of the Year Award. Sharon was recognized for leading Chapman Technical Group to become one of the most highly regarded engineering firms in the state after the death of her husband and company founder, Harvey R. Chapman.
- "EXPECT THE BEST FROM WEST VIRGINIA AWARD", 1998, Charleston Regional Chamber of Commerce.
- "GOVERNOR'S AWARD FOR ENGINEERING EXCELLENCE", 1990, The West Virginia Chapter of the American Public Works Association, in recognition of outstanding Public Works Engineering and Design of Projects within West Virginia.
- "GEORGE WARREN FULLER AWARD", Harvey R. Chapman, P.E., 1984, Robert G. Belcher, P.E., 2001, and Sharon L. Chapman, 2005, American Water Works Association, for distinguished service in the water supply field in the State of West Virginia.



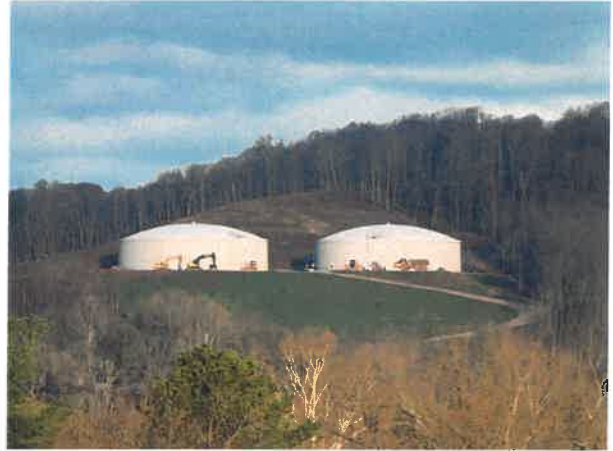
# ENVIRONMENTAL ENGINEERING



Chapman Technical Group readily provides water and wastewater system analysis, planning, design, construction administration, and construction observation services for all aspects of municipal and commercial/industrial projects. Our vast experience in these areas has enabled our firm to become one of the clear leaders in the fields of water, wastewater, and stormwater engineering. This enables the development and betterment of our communities by improving our environment and providing for the public's health, safety, welfare, and convenience.

## Water Engineering

Chapman Technical Group's experience with water systems projects has encompassed both new construction and renovations and rehabilitation of existing treatment, storage, pumping, and distribution facilities ranging in size from small on-site systems supplying only a handful of people to larger systems supply entire service territories. Our firm also provides in-depth comprehensive planning studies, including source of supply studies relating specifically to record and recurring droughts, as well as detailed computerized hydraulic analyses of entire systems in order to identify and eliminate any significant flow and pressure constraints within those systems.



## Wastewater Engineering

Chapman Technical Group's experience with wastewater system has encompassed new construction as well as renovations and rehabilitation of existing treatment, pumping, and collection facilities ranging in sizes from small on-site systems to larger systems serving approximately 100,000 people. Our firm also provides in-depth comprehensive facility planning studies, including extensive field investigations for performing detailed infiltration/inflow analysis and subsequent sanitary sewer system evaluation surveys.



## Overall Capabilities

- Funding and Regulatory Assistance
- Feasibility Studies/Facility Plans
- Water and Wastewater Treatment Design
- Water Distribution and Storage
- Wastewater Collection and Pumping
- Computerized Hydraulic Network Analysis
- I/I Analysis/SSES Studies/CSO Plans
- Management Programs



## **Blackwater Falls State Park Wastewater System Improvements**

1584 Blackwater Lodge Road  
Davis, West Virginia

As part of its project to develop 13 new cabins at Blackwater Falls State Park, Chapman Technical Group designed a sanitary sewer collection and treatment system to serve the cabins. The park has an existing 6,100 gpd wastewater treatment plant; however, due to topographical and geographical constraints, it was determined the most economical method of providing service to the cabins was by the construction of a new wastewater collection and treatment system.

The collection system is a conventional gravity system with a single duplex grinder pump station to transport the flow to the treatment plant. The wastewater treatment plant is a 4,000 gpd recirculating sand filter treatment system with ultraviolet disinfection.





# WASTEWATER ENGINEERING



**WV DNR Camp Creek State Park  
Wastewater System Improvements**

The West Virginia Division of Natural Resources, Park and Recreation Department, retained Chapman Technical Group to provide design and construction phase services for a wastewater collection and treatment system at Camp Creek State Park in Mercer County, West Virginia. The existing facilities were served with septic tanks and leach fields which were failing due to shallow rock, a high groundwater table, and overloading during seasonal peak flows. The initial phase of the project was completed in July of 2010 and included a 6,400 GPD re-circulating sand filter wastewater treatment plant with UV disinfection and a grinder pump station which serves the superintendent's residence as well as the park's RV dump station. The treatment plant was constructed on engineered fill to elevate it above the historical high water level. Both the treatment plant and pump station were designed to facilitate future expansions of the wastewater system to pick up other park facilities when funding becomes available.

# WASTEWATER ENGINEERING



## Bluefield Sanitary Board Wastewater System Improvements

100 Rogers Street #2  
Bluefield, West Virginia 24701

Chapman Technical Group provided surveying, permitting, funding procurement assistance, design and construction phase services, and construction observation services to replace worn, failure prone, and outdated equipment at the Sanitary Board of Bluefield's existing 8.1 MGD Westside Sewage Treatment Plant and upstream 3.4 MG Bluestone Wet Weather Flow Holding Facility. Construction began in September 2020 and is ongoing.

The project includes removal and replacement of mechanical bar screens and new screw conveyors for influent screening; new screenings dumpster storage building; new suction lift influent pumps with associated electrical components; upgrades to influent pump station HVAC components; removal of existing fine mechanical screen and auger conveyor; removal and replacement of existing grit removal equipment; replacement and recoating of primary clarifier components; replacement of existing diffusers in the aeration basins; installation of a baffle at the entrance to the secondary clarifier diversion structure; replacement and recoating of secondary clarifier components and



installation of new baffles and launder covers in the secondary clarifiers; removal of existing traveling bridge sand filters and associated equipment, and replacement with new discfilters for tertiary treatment; removal and replacement of existing sludge pumps; installation of new screw presses; new operations building generator; and asphalt paving within the facility. The project also includes construction of a new submersible duplex wet weather pump station, and replacement of the existing actuated diversion gates at the Bluestone Holding Facility with a new diversion structure including an inline deflection screen.



# WASTEWATER ENGINEERING



## Boone County Public Service District Wastewater Collection System

Post Office Box 287  
Danville, West Virginia

Chapman Technical Group provided design and construction observation services for the Wastewater System Improvements project completed in June 2009. The project consisted of constructing a new wastewater treatment plant and collection system renovations. The collection system consisted of constructing approximately 17,000 L.F. of 6" through 12" gravity sewer; removing and replacing approximately 1,400 L.F. of 8" and 10" gravity sewer; constructing six (6) sewage lift stations; constructing approximately 5,500 L.F. of 1" through 4" forcemain; abandoning existing septic tanks; and constructing a package wastewater treatment plant.

# WASTEWATER ENGINEERING



*New 0.370 MGD WWTP*



*Lift Station Improvements*



*I/I Rehabilitation*



*Storm Water Separation on US Route 250*

**City of Belington**  
**Wastewater System Improvements**  
Post Office Box 926  
Belington, West Virginia

Chapman Technical Group provided design and construction observation services for the above project which was completed in 2013. The project consisted of I/I reduction with the rehabilitation of approximately 3.5 miles of the existing wastewater collection system; stormwater separation from sanitary sewers; upgrading capacity of existing lift stations; and the construction of a new 370,000 GPD WWTP (70% increase in capacity). This work was performed in order to reduce/eliminate CSO discharges for compliance with the Town's Long Term Control Plan requirements.



# WASTEWATER ENGINEERING



## Culloden Public Service District Wastewater System Improvements

Post Office Box 405  
Culloden, WV 25510

Chapman Technical Group has provided professional engineering services to the Culloden PSD for over 30 years including a variety of sanitary sewer rehabilitation projects.

The most recent project started construction in 2020 and involves the replacement of approximately 8,000 LF of sanitary sewer line, the construction of a new 400

gpm submersible duplex pump station with emergency generator, the abandonment of existing sanitary sewer lines, manholes, and lift station, and the demolition of the former Culloden PSD Wastewater Treatment Plant. An additional project for the relocation of existing sanitary sewer lines that conflict with the proposed Culloden Interstate 64 Interchange project by the WV DOH is also currently under construction. Chapman Technical Group provided field reconnaissance, field surveying, funding procurement assistance, permitting, design and construction phase services, including construction observation services, and preparation of record drawings for both projects.



# WASTEWATER ENGINEERING



**Town of Pocahontas**  
**Wastewater System Improvements**  
100 Main Street  
Pocahontas, West Virginia

Chapman Technical Group provided design and construction observation services for a sewer collection system rehabilitation project completed in 2013. The project consisted of I/I reduction with the rehabilitation of approximately 1.2 miles of the existing wastewater collection system. Our relationship with the Town of Pocahontas Sanitary Board began in 1987, and as spanned over four (4) decades.





# WASTEWATER ENGINEERING



## City of Beckley Sanitary Board Piney Creek Interceptor Replacement

301 South Heber Street  
Beckley, West Virginia

The Piney Creek Interceptor handles almost 80% of the flow to the city's wastewater treatment plant and extends nearly five miles from the treatment plant to the Mabscott area. The existing interceptor sewer was plagued with surcharge and overflow problems during storms and the Sanitary Board engaged Chapman Technical Group to design a replacement interceptor. Chapman Technical Group also provided construction observation services and construction administration for this project.

The new interceptor includes 10,700 feet of 30-inch Ductile Iron Pipe (DIP), 15,800 feet of 24-inch DIP, 1,700 feet of 18-inch DIP, and an additional 5,000 feet of collector sewer lines. Bypass pumping, at rates ranging from 6,000 to 11,000 gallons a minute, was used during construction to prevent unauthorized discharges.



The project was constructed in four contracts with a total construction cost of \$9.8 million. This project also eliminated the sole remaining permitted CSO discharge in the Sanitary Board's system



# WASTEWATER ENGINEERING



## Bluefield Sanitary Board Wastewater System Improvements

100 Rogers Street #2  
Bluefield, West Virginia 24701

Chapman Technical Group is providing the Sanitary Board of Bluefield with ongoing survey, permitting, design, construction phase, and construction observation services to replace approximately 1,590 LF of existing 15-inch vitrified clay gravity sewer main and brick manholes with new 18-inch gravity sewer and precast concrete manholes on College Avenue in Bluefield, WV and Bluefield, VA. The project also includes crossings of two existing stormwater box culverts and replacement of approximately 230 LF of existing sub-mains to tie flows into the new 18-inch main. The existing sewer was constructed more than 60 years ago. Breaks in the existing sewer lines have resulted in numerous sinkholes that are forming on College Avenue and are a source of infiltration and inflow. The goal of the project is to eliminate the existing breaks and sags and reduce infiltration and inflow.





# WASTEWATER ENGINEERING



**WV American Water Company**  
**Wastewater System Improvements**  
1600 Pennsylvania Avenue  
Charleston, West Virginia 25302

Chapman Technical Group has provided professional engineering services since 2014 to the WV American Water Company for the Fayetteville area WWTP and collection system. Projects have included miscellaneous improvements at the plant, lift station renovations, CSO compliance measures, and sanitary sewer rehabilitation. Services consist of field reconnaissance, field surveying, permitting, design and construction phase services, including construction observation services, and preparation of record drawings.





# WASTEWATER ENGINEERING



## Town of Monongah Wastewater System Improvements Post Office Box 9119 Monongah, West Virginia

Construction was completed in June 2000 for the Town of Monongah's wastewater system improvements project. Chapman Technical Group was hired by the Town in 1995, and provided all planning, design, and construction phase engineering services for the project. The Town's system was originally constructed in the 1960's and consisted of a primary treatment facility, three (3) sewage lift stations, and approximately eight (8) miles of gravity sewer collection lines. The majority of the collection system was a combined system, and numerous bypasses and overflows occurred on a regular basis. The treatment facility was unable to meet permitted discharge limitations, and the lift stations were in need of major repairs. Upon completion of the project, Monongah's sanitary sewer is now being transported to the City of Fairmont for treatment and disposal via a new lift station and over two (2) miles of force main, which parallels a rails-to-trails park. Since the City of Fairmont is providing treatment for



Monongah, it was of paramount importance that Monongah's collection system undergo rehabilitation to remove stormwater from the collection system. After extensive field investigations, including smoke and dye testing, the most critical problem areas were identified for and subsequently rehabilitated. The nearly \$2.5 million project also included the replacement of the two (2) existing lift stations, including auxiliary power sources, as well as renovations Fairmont's existing lift station, which directly accepts Monongah's sanitary sewer.



# WASTEWATER ENGINEERING



## City of St. Albans Wastewater System Improvements 1499 Maccorkle Avenue St. Albans, WV 25177

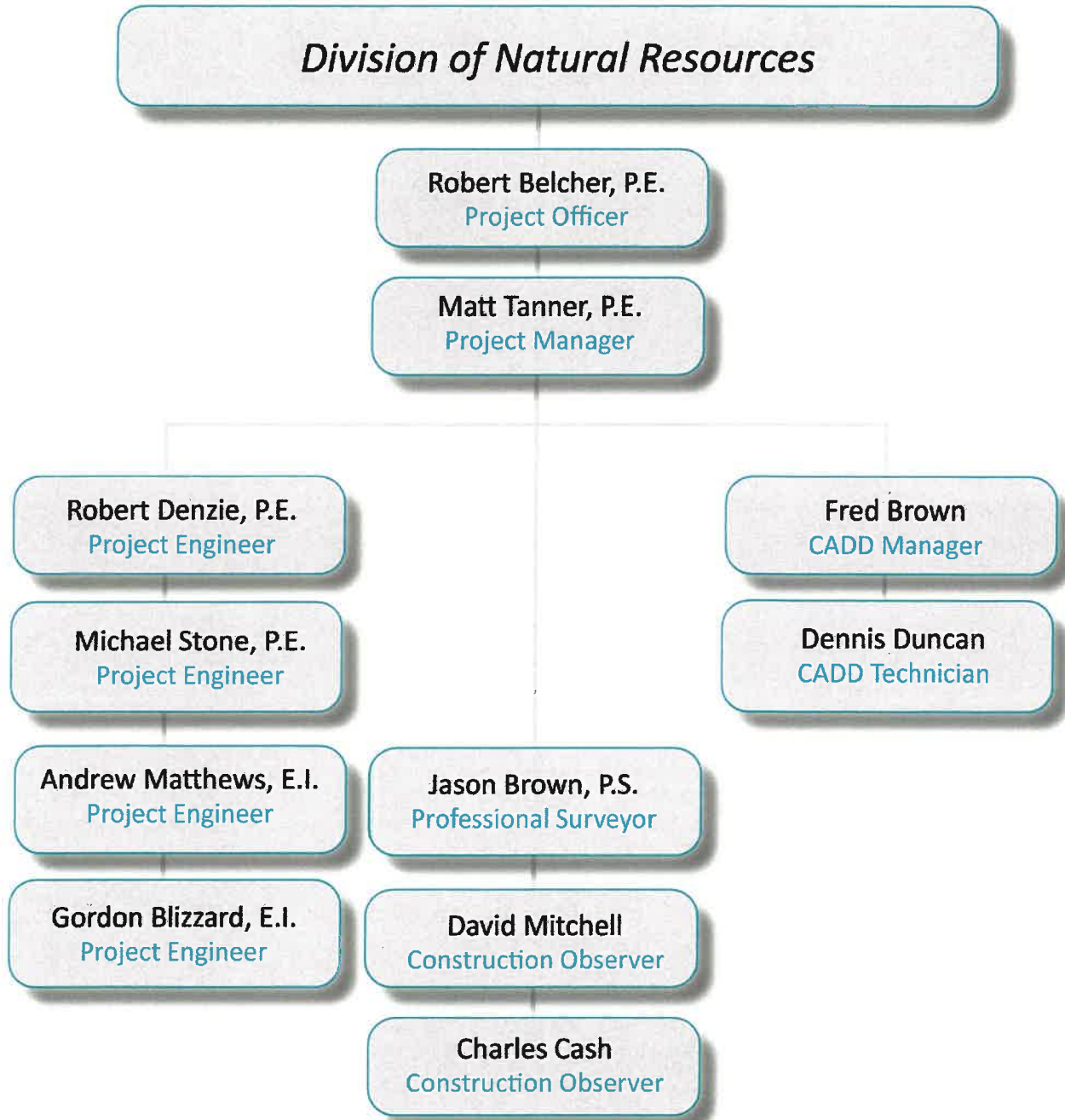
In 2019, the St. Albans Municipal Utility Commission replaced two major pieces of equipment at their wastewater facility located along US Route 60 in St. Albans, WV. The new ultraviolet (UV) disinfection system utilizes low-pressure high-intensity UV lamps contained within quartz sleeves to protect the lamps from the wastewater flow, and reduces fecal coliform levels to less than 200/100 ml for flows up to a peak hydraulic flow of 18.2 MGD.

The new belt filter press dewateres solids removed from the wastewater flow prior to being disposed of by landfill or by land application. The new equipment is a totally self-contained, factory assembled 1.5-meter effective width belt filter press.



The twin-belt press utilizes the combination of chemical conditioning of the sludge and compression of the solids with high pressure rollers and belts, thus producing a sludge cake in the 16-20% dry solids range. The cost of the replacement UV disinfection system and belt filter press was approximately \$1.85 million.

## PROJECT TEAM





## Robert G. Belcher, P.E.

Senior Vice President  
Project Officer

Years of Experience: 40  
Years with Chapman: 37

### Education

B.S., Civil Engineering, 1983,  
West Virginia Institute of  
Technology

### Registration

Civil Engineer: WV, OH, VA

### Affiliations

WV Water Environment  
Association

Contractor's Association of  
WV

WV American Water Works  
Association

WV Society of Professional  
Engineers

WV American Council of  
Engineering Companies

WVUIT Civil Engineering Ad-  
visory Board

WV Qualifications Based  
Selection Council

### Awards

George Warren Fuller  
Award, 2001

## Experience

### Water Systems

Design and project management for numerous water systems for both public and private water companies. Projects include new water treatment plants as large as 6.0 MGD, improvements to existing plants, water mains and distribution systems. Water storage projects include glass-lined steel tanks, welded high-strength steel tanks, elevated pedestal tanks, and pre-stressed concrete tanks.

### Wastewater Systems

Design and project management for numerous wastewater systems throughout West Virginia. Projects include new, secondary and tertiary wastewater treatment plants as large as 4.5 MGD, improvements to existing plants, small-flow treatment plants, new and rehabilitation of wastewater collection systems, CSO compliance, SSES Reports and I/I Studies, and facility plan updates.

### Miscellaneous

Design and project management for large highway and bridge projects, airport improvements projects, large stormwater management projects including assistance with MS4 compliance, as well as potable water and wastewater system design for site development projects throughout West Virginia, and Virginia.





# Matthew T. Tanner, P.E.

## Civil/Environmental Engineer

Years of Experience: 18  
Years with Chapman: 5

### Education

MSE, Civil and Environmental  
Engineering, 2021  
Marshall University

BS, Engineering Mechanics 2005,  
Lipscomb University

### Registration

Professional Engineer: WV, OH, PA,  
KY, MD, TN

### Affiliations

Member, Water Environment  
Federation  
Member, American Water Works  
Association  
Infrastructure Chair, WV American  
Council of Engineering Companies

### Projects Include:

City of Saint Albans Municipal  
Utility Commission WWTP  
Improvements  
(Saint Albans, WV)

Culloden Public Service District  
Virginia Avenue Sewer  
Replacement and  
Lift Station Relocation  
(Culloden, WV)

City of Lewisburg  
Water System Improvements  
(Lewisburg, WV)

Sanitary Board of Bluefield  
Westside Wastewater Treatment  
Plant Improvements  
(Bluefield, WV)

Sanitary Board of Bluefield  
College Avenue Sewer  
Replacement Phase II  
(Bluefield, WV)

## Experience

### Water Systems

Overall project experience includes design, permitting, bidding, and construction management of public and private water system projects. Specific project experience includes permitting, design, and construction administration of distribution system extensions, water storage tanks, and water treatment system modifications for public water system compliance.

### Wastewater Systems

Overall experience includes design, permitting, bidding, construction administration and management of various municipal and industrial wastewater systems. Specific project experience includes gravity collection systems, forcemain transmission systems, stream crossings, industrial wastewater treatability studies, onsite wastewater treatment systems, and municipal and industrial wastewater treatment facility improvements.

### Storm Water Systems

Overall experience includes stormwater control and management design and permitting in West Virginia, Kentucky, Ohio, and Tennessee. Specific project examples include NPDES construction stormwater permitting, NPDES Multi-Sector Stormwater permitting, SWPPP preparation, and design of stormwater controls and management best management practices.



## Robert C. Denzie, P.E.

### Civil Engineer

Years of Experience: 10  
Years with Chapman: 10

#### Education

B.S., Civil Engineering, 2014  
Marshall University

#### Registration

Professional Engineer: WV

#### Affiliations

Member, American Water  
Works Association Member,  
Water Environment Federation

#### Projects Include:

City of Elkins  
Water System Improvements  
(Elkins, WV)

Clay County Public Service  
District  
Water System Improvements  
(Lizemore, WV)

West Virginia American Water  
Company Wastewater System  
Improvements  
(Fayetteville, WV)

City of Buckhannon  
SCADA System  
(Buckhannon, WV)

West Virginia DNR  
Town of Cass Copper Removal  
(Cass, WV)(Ellenboro, WV)

Charleston Sanitary Board  
Emerald Heights and Sherwood  
Forest Pump Stations Project  
(Charleston, WV)

City of Lewisburg  
Water System Improvements  
(Lewisburg, WV)

## Experience

#### Water Systems

Overall experience includes planning and design of various public water system projects throughout West Virginia. Specific project experience includes distribution system design, treatment plant design, existing system analysis, construction management, and observation.

#### Wastewater Systems

Overall experience includes design of various public wastewater system projects throughout West Virginia. Specific project experience includes design of gravity and force main transmission systems, lift stations, and existing system rehabilitation.

#### Storm Water Systems

Overall experience includes planning and design of various public and private stormwater system projects throughout West Virginia. Specific project experience includes, stormwater collection system design and stormwater management plan preparation.



## Michael Stone, P.E.

### Civil/Environmental Engineer

Years of Experience: 10  
Years with Chapman: 3

#### Education

ME, Environmental Engineering  
Colorado State University; 2012

BS, Civil Engineering WV  
University Institute of  
Technology; 2012

#### Registration

Professional Engineer: WV

#### Affiliations

Water Environment Federation

#### Projects with Chapman:

Southern Jackson County PSD  
Wastewater Treatment  
Improvements  
(Fairplain/Kenna, WV)

City of Lewisburg  
Water System  
Improvements  
(Lewisburg, WV)

#### Projects with other firms included:

Oak Hill Sanitary Board  
Sewer System Improvements  
(Oak Hill, WV)

Union Public Service District  
Rock Fork Sewer Extension  
Project  
(Cross Lanes, WV)

Ravencliff-McGras-Saulsville  
Public Service District  
New Richmond Water System  
Rehabilitation  
(Glen Fork, WV)

## Experience

#### Wastewater Systems

Overall experience includes planning, design, permitting, bidding, and construction management of municipal wastewater system projects. Specific project experience includes gravity collection systems, pump and forcemain transmission system, and wastewater treatment facilities.

#### Water Systems

Overall project experience includes planning, design, permitting, bidding and construction management of potable water systems. Specific project experience includes distribution and storage systems and water treatment facilities.

#### Storm Water Systems

Overall experience includes stormwater control and management design and permitting in West Virginia. Specific project examples include NPDES construction stormwater permitting, SWPPP preparation, and design of stormwater control and management best management practices.



## Andrew Matthews, EI

### Civil Engineer

**Years of Experience: 7**  
**Years with Chapman: 7**

#### Education

**B.S., Civil Engineering, 2018**  
**West Virginia University**

#### Registration

**Engineering Intern: WV**

#### Projects Include

**WV American Water**  
**Garden Farms WST**  
**Replacement; Cabell**  
**County, WV**

**Elkins Road PSD**  
**Water Distribution System**  
**Extensions; Upshur County,**  
**WV**

**City of Buckhannon**  
**Water System**  
**Improvements; Buckhannon,**  
**WV**

**WV American Water**  
**Company Weston**  
**to Webster Springs**  
**Interconnection; Webster**  
**County, WV**

**City of Lewisburg**  
**Water System**  
**Improvements; Lewisburg,**  
**WV**

## Experience

#### Water Systems

Overall experience includes planning and design of various public water system projects throughout West Virginia. Specific project experience includes distribution system design, treatment plant design, existing system analysis, construction management, and observation.

#### Wastewater Systems

Overall experience includes design of various public wastewater system projects throughout West Virginia. Specific project experience includes design of gravity and force main transmission systems, lift stations, and existing system rehabilitation.

#### Stormwater Systems

Overall experience includes planning and design of various public and private stormwater system projects throughout West Virginia. Specific project experience includes, stormwater collection system design and stormwater management plan preparation.



## Gordon W. Blizzard, EI

### Civil Engineer

Years of Experience: 16  
Years with Chapman: 2

#### Education

B.S., Civil Engineering, 2022  
Marshall University

B.A., History, 2012  
West Virginia State University

#### Registration

Engineer Intern, WV

#### Projects include:

Chesapeake Storm Sewer  
Evaluation Survey  
Chesapeake, WV

#### Projects with other firms:

Palazzo Del Luna  
Miami, FL

FIU Pedestrian Bridge  
Miami, FL

Tampa International Airport  
Parking Garage  
Tampa, FL

## Experience

#### Water Systems

Overall experience includes planning and design of various public water system projects throughout West Virginia. Specific project experience includes distribution system design, treatment plant design, existing system analysis, construction management, and observation.

#### Wastewater Systems

Overall experience includes design of various public wastewater system projects throughout West Virginia. Specific project experience includes design of gravity and force main transmission systems, lift stations, and existing system rehabilitation.

#### Storm Water Systems

Overall experience includes planning and design of various public and private stormwater system projects throughout West Virginia. Specific project experience includes, stormwater collection system design and stormwater management plan preparation.

#### Project Coordination/CADD

Overall experience includes production and coordination of post-tensioning shop drawings in mono- and multi-strand applications, as well as project coordination.





**Fred L. Brown**  
CADD Manager

Years of Experience: 25  
Years with Chapman: 25

### Education

Drafting/Cadd Degree,  
1997, Carver Career Center,  
WV

### Affiliations

Member, National  
Vocational Technical Honor  
Society

### Achievements

Winner, 1996, Carver  
Career Center VICA Skills  
Competition for Technical  
Drafting

Judge, 2001, State VICA  
Skills Competition for  
Technical Drafting

## Experience

### Bridge and Highway

Responsible for CADD drafting on base map, site development, construction plan sheets, signal plans, super elevation plans, existing and proposed utilities, utility relocation plans, lighting plans, boring construction plans, typical sections and details, mainline cross sections, bridge plans and details, attenuator details, guardrail plan layout and details, geometric plans, station and offsets of mainline centerline, stationing and curve geometric information, survey reference and control plans, point dump creations.

### Architectural and Structural

Responsible for CADD drafting on existing and proposed building plans, structural framing plans and details, foundation plans and details, structural scheduling.

### Water and Wastewater

Responsible for CADD drafting on treatment plants, improvements on existing and new facilities, stormwater plans and profiles, booster stations, meter vaults, water system updates for public and private sectors, PRV plans and details.

### Site Design

Responsible for CADD drafting on proposed site layouts, site details and cross sections.

### Airport

Responsible for CADD drafting on existing and proposed taxiways and runways, taxiway signage, hangar layout, and airport master plans.

### Mapping

Responsible for CADD drafting for city, street, and zoning maps.



## **Dennis N. Duncan**

### **CADD Technician**

**Years of Experience: 30**  
**Years with Chapman: 25**

#### **Education**

**EDSI REVIT, 2014**  
**Mountain CAD, 1996**  
**West Virginia State College,**  
**1996**  
**AS, Computer Aided Drafting**  
**and Design Putnam County**  
**Vocational School, 1992**

#### **Projects Include**

**State Road Commission**  
**Building Renovation**  
**(Charleston, WV)**

**New WV DOH Rest Areas**  
**and Welcome Centers**  
**(21 Locations throughout**  
**WV)**

**WV Division of Natural**  
**Resources:**  
**Beech Fork State Park**  
**Cabins**  
**Blackwater Falls State Park**  
**Cabins**

**New Canaan Valley State**  
**Park Ski Lodge**  
**(Canaan Valley, WV)**

**New Pocahontas County**  
**Community Center**  
**(Marlinton, WV)**

**Eastern WV Regional Airport**  
**Terminal Bldg**  
**(Martinsburg, WV)**

**Upshur County Courthouse**  
**Projects**  
**(Buckhannon, WV)**

## **Experience**

#### **Bridge and Highway**

Responsible for CADD drafting on mainline and side road profiles, maintenance of traffic, signing and marking plans, intersection details, survey reference and control plans, typical roadway sections, stormline profiles, bridge sections and details.

#### **Architectural and Structural**

Responsible for CADD drafting on recreational and commercial floor plans, building cross sections and details, structural framing plans, foundation plans and details, and building renovations.

#### **Water and Wastewater**

Responsible for CADD drafting on treatment plants, improvements on existing and new facilities, stormwater plans and profiles, booster stations, meter vaults, water system updates for both public and private sectors, PRV plans and details.



## Jason Brown, P.S.

### Professional Surveyor

Years of Experience: 28  
Years with Chapman: 13

#### Education

A.S., Land Surveying, 2002  
Glenville State College, WV

#### Registration

Professional Surveyor: WV,  
KY, VA, PA

#### Affiliations

WV Society of Professional  
Surveyors

## Experience

Jason leads the Chapman Technical Group survey team and is experienced in topographical and boundary surveys, as well as flood plain mapping, ALTA surveys, and construction layout. Jason also coordinates aerial mapping and LiDAR services with GRW, the parent company of Chapman Technical Group.

#### Highways

Established control, site surveying, topographic surveying, courthouse research, drawing production, Right-of-Way Questionnaires, bore hole stake out, and all surveying associated with the initial and final design of WV highways.

#### Site Development

Experienced in all types of surveying associated with site development, to include control, topographic boundaries, research, and drawing production. Projects include military complexes, public housing, commercial development, industrial and institutional complexes, churches, resorts and public facilities throughout the state.

#### Schools

Associated surveying for new schools, additions, athletic fields, and sidewalks projects.

#### Parks and Recreation

Associated surveying for projects including swimming pools, bathhouses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems.

#### Water/Wastewater/Stormwater Systems

Associated surveying for the design of water systems, sanitary sewer systems, and stormwater systems, including treatment facilities for both private and public systems throughout the state. Also, field experience in the inventory and collection of attribute data using GPS equipment for uploading to GIS databases.



## David R. Mitchell

### Construction Representative

Years of Experience: 25  
Years with Chapman: 25

#### Education

A.S., Applied Science, 1998  
Lee College  
LA Wilson Technological Center,  
1982

#### Projects Include

Mercer County Airport, WV:  
Runway Safety Area and Piling  
Wall

Raleigh County Airport, WV:  
Runway Paving

Eastern WV Regional Airport, WV:  
Taxiway Paving

Bluefield Sanitary Board, VA/WV:  
Westside Sewer Plant Upgrade  
and  
ADA Wastewater Plant Upgrade

Elkins-Randolph County Airport,  
WV:  
Runway Re-Paving, Lighting, PAPI  
System

City of St. Albans, WV:  
Water System Improvements

City of Elkins  
Water Treatment Plant  
3.0 MG Water Storage Tank  
(Elkins, WV)

## Experience

#### Construction Observation

Responsibilities include all aspects of field construction and observation from commencement of construction through project start-up. Maintains field diaries and construction log books; monitors shop drawing approvals and fabrication schedules; observes field testing of completed work; verifies contractor's periodic payment requests; verifies completed site work for as-built drawings; attends construction progress meetings; and updates clients on project progress.

#### Water and Wastewater

Construction observation for water/sewer line and wastewater treatment plant upgrades.

#### Airport

Construction observation for runway, taxiway light installation, paving taxiway and runway, runway safety area, AWOS installation, piling wall, and PAPI installation.

#### Surveying

Assists with various types of field surveying for all types of projects.



## Charles D. Cash, Jr.

### Construction Representative

Years of Experience: 32  
Years with Chapman: 30

#### Education

WV DOH Portland Cement  
Concrete Course, 1998  
WVDOH Hot-Mix Asphalt Course,  
2022

#### Registration

WV Bureau of Public Health,  
Authorized Sample Collector for  
New Water Mains, 2018-2020

#### Projects include:

Corporation of Shepherdstown,  
WV: Wastewater Treatment Plant  
Improvements

Corporation of Shepherdstown,  
WV: Water Storage Tanks

West Virginia American Water  
Co., WV: Coal River Road Main  
Line Replacement

West Virginia American Water  
Co., WV: Fayetteville Waste  
Water System Improvements

West Virginia American Water  
Co., WV: Amandaville, WV:  
8.0 MG Water Storage Tank

Town of New Haven,  
WV: Wastewater System  
Improvements

City of Belington, WV:  
Water System Tank Improvements

West Virginia American Water  
Co., WV: Huntington Water  
Treatment Plant Grit Removal  
Tank

## Experience

#### Construction Observation

Responsibilities include all aspects of field construction and observation from commencement of construction through project start-up. Maintains field diaries and construction log books; monitors shop drawing approvals and fabrication schedules; observes field testing of completed work; verifies contractor's periodic payment requests; verifies completed site work for as-built drawings; attends construction progress meetings; and updates clients on project progress.

#### Water and Wastewater

Construction observation for water/sewer line and wastewater treatment plant upgrades.

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## REFERENCES



1. Honorable Scott James  
Mayor  
City of Saint Albans  
1499 MacCorkle Avenue  
Saint Albans, WV 25177  
(304) 722-3355
2. Mr. Shannon Bailey, PE  
Executive Director  
Sanitary Board of Bluefield  
100 Rogers Street  
Bluefield, WV 24701  
(304) 325-3681
3. Ms. Misty Hill  
City Manager  
City of Lewisburg  
942 Washington Street, West  
Lewisburg, WV 24901  
(304) 645-2080
4. Mr. David Carovillano, PS, PE  
Senior Project Manager  
WV American Water  
1600 Pennsylvania Avenue  
Charleston, WV 25302  
(304) 340-2018
5. Mr. Jonathan Fowler, PE  
WV Public Service Commission  
201 Brooks Street  
Charleston, WV 25301  
(304) 340-0491

# ABILITY TO MEET BUDGETS & DEADLINES



## Representative Project Budgets

1.	City of St. Albans Water Distribution System Improvements	
	* Estimated Cost	\$6,000,000.00
	* Actual Bid	\$4,853,711.00
	* 19.10% Under Engineer's Estimate	
2.	Bluefield Sanitary Board - Weside WWTP Improvements	
	* Estimated Cost	\$11,100,000.00
	* Actual Bid	\$9,985,000.00
	* 8.10% Under Engineer's Estimate	
3.	City of Davis Water System Improvements	
	* Estimated Cost	\$1,560,000.00
	* Actual Bid	\$1,480,000.00
	* 0.051% Under Engineer's Estimate	
4.	Elkins Road PSD Water System Improvements	
	* Estimated Cost	\$4,560,000.00
	* Actual Bid	\$4,580,000.00
	* 0.0044 % Over Engineer's Estimate	
5.	Culloden PSD Wastewater System Improvements	
	* Estimated Cost	\$1,660,000.00
	* Actual Bid	\$1,480,000.00
	* 10.8% Under Engineer's Estimate	

## Representative Project Schedules

		Project Cost	Scheduled Completion	Actual Completion
1.	Corporation of Shepherdstown Lowes Bypass (Green Reserve)	\$376,000	60 days	45 days
2.	St. Albans 1.5 MG Steel Water Tank	\$335,000	90 days	30 days
3.	Culloden PSD Water Storage Tank	\$250,000	90 days	30 days
4.	Elkins Road PSD Water System Improvements	\$3,500,000	120 days	120 days
5.	Greater St. Albans PSD Sewer System	\$3,838,000	270 days	180 days
6.	Town of Davis Stormwater System Improvements (Green Reserve)	\$271,000	60 days	30 days
7.	Clay - Roane PSD Water System	\$274,000	120 days	45 days