



West Virginia Division of Natural Resources

Pipestem Resort State Park Wastewater Treatment and Collection System Renovations

February 22, 2019

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February 20, 2019

Mr. Guy Nisbet
West Virginia Division of Natural Resources
2019 Washington Street East
Charleston, West Virginia 25305

RE: Expression of Interest for Pipestem Resort State Park Wastewater Treatment and Collection System Renovations

Dear Mr. Nisbet:

Thompson & Litton (T&L) is excited to submit the attached proposal for professional engineering services for the above referenced project! With more than six (6) decades of continuous service, we are proud of our company's legacy of thousands of completed projects involving vital infrastructure such as wastewater treatment and collection.

As you review our proposal we would like to highlight the following advantages we offer.

- We are a Proven Team. T&L has completed hundreds of wastewater projects including planning, design and construction phase services. In addition to T&L's extensive experience, we also bring to bear the resources of recently acquired Stafford Consultants, Inc., who has been a leader in engineering throughout West Virginia for the past several decades. We believe that our larger organization will allow us to provide a wider array of services, and gives our organization more depth, which will help us move your projects forward more efficiently.
- Depth and Diversity Full Service In-House. T&L is a full service engineering, surveying, architectural and construction company with all major disciplines under one corporate roof. We only subcontract specialties.
- Proximity of our firm and team members to the project - accessibility and same day responsiveness. T&L will manage this project out of our Princeton, West Virginia Office.
- Understanding of the many variables that determine financial viability of infrastructure projects (financial modeling).

At T&L we view our role on our projects as being an extension of the clients we serve. Ultimately, we are not successful if our clients are not successful. Accordingly, we will strive relentlessly to meet or exceed your expectations on every project assigned to us under this contract.

We look forward to an opportunity to meet with you to further expand upon our capabilities and experience.

Sincerely,

Stacy A. Fowler, PE
Senior Project Manager



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01

Staff qualifications and experience in completing similar projects.

Please find the resumes for T&L's project team on the following pages.



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Gregory H. Hurst, PE

PRESIDENT

Greg Hurst, PE, is a 1991 graduate of Virginia Military Institute receiving a Bachelor of Science Degree in Civil Engineering, and a 1994 graduate of Virginia Tech receiving a Master of Science Degree in Environmental Engineering. Greg has amassed 28 years of experience in the design and construction of engineering projects.

Over the years, Greg has significantly contributed to the preliminary, planning, final design, and construction of water, wastewater, site and infrastructure development projects for numerous engineering and architectural projects.

As an extension of his role, and duties as President, Greg contributes his expertise to all engineering projects as Officer-in-Charge, providing oversight and guidance, QA/QC, and ensures that the Project Team has access to the resources necessary to complete the project on time and within budget.

The following is a sampling of his project-related experience:

Claypool Hill Wastewater Treatment Plant

Tazewell County Public Service Authority, Tazewell County, Virginia. Project Engineer.

Northern Tazewell County Wastewater Treatment Plant

Tazewell County Public Service Authority, Tazewell County, Virginia. Project Engineer.

Richlands Wastewater Treatment Plant

Town of Richlands, Virginia. Project Engineer.

Westside Wastewater Treatment Plant

Bluefield Sanitary Board, Bluefield, West Virginia. Project Engineer.

Holston Regional Sewer System Wastewater Treatment Plant

Preliminary Engineering Report

Scott County Public Service Authority, Scott County, Virginia. Project Engineer.

Gate City/Holston Regional Wastewater Treatment Plant

Scott County Public Service Authority, Scott County, Virginia. Project Engineer.

Hillsville Wastewater Treatment Plant

Town of Hillsville, Virginia. Design Engineer.

Big Rock/Conaway Wastewater Treatment Plant Retrofit/ Upgrade Preliminary Engineering Report

Buchanan County Public Service Authority, Buchanan County, Virginia. Project Engineer.

Big Rock/Conaway Wastewater Treatment Plant

Buchanan County Public Service Authority, Buchanan County, Virginia. Project Engineer.

Bland Correctional Center Wastewater Treatment Plant

English Construction Company, Inc./Virginia Department of Corrections, Bland County, Virginia. Project Engineer.

Rocky Mount Wastewater Treatment Plant UV Replacement

Town of Rocky Mount, Virginia. Project Engineer.

EDUCATION & TRAINING

- ✦ Bachelor of Science, Civil Engineering, Virginia Military Institute, 1991
- ✦ Master of Science, Environmental Engineering, Virginia Polytechnic Institute & State University, 1994

REGISTRATIONS

- Professional Engineer: VA, 1998
- Professional Engineer: NC, 2001

PROFESSIONAL AFFILIATIONS

- ✦ American Water Works Association
- National Society of Professional Engineers
- ✦ Virginia Society of Professional Engineers

AWARDS AND PUBLICATIONS

- ✦ Hurst, Greg, Master Thesis on "Evaluating Ferrous Iron Chlorite Ion Removal," The Journal of The American Water Works Association, Volume 89, Issue 8, August 1997

CONTACT INFORMATION

Thompson & Litton, Inc.
726 Auburn Avenue
Radford, Virginia 24141
Phone: 540-633-1897
Fax: 540-633-1896
ghurst@T-L.com



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Stacy A. Fowler, PE

SENIOR PROJECT MANAGER

Stacy Fowler, PE, is a 1995 graduate of Bluefield State College receiving a Bachelor of Science Degree in Civil Engineering Technology, and a 2007 graduate of the University of Central Florida receiving a Master of Science Degree in Civil Engineering. He has 24 years of experience in the management of engineering projects.

As the Project Manager, Stacy is responsible for project coordination and is the main point of contact between you and the T&L Project Team. He will see that the necessary services are provided and that the project is completed on time and within budget constraints.

The following is a sampling of his project-related experience:

EDUCATION & TRAINING

- Bachelor of Science, Civil Bachelor of Science, Civil Engineering Technology, Bluefield State College, 1995
- Master of Science, Civil Engineering, University of Central Florida, 2007

REGISTRATION

- Professional Engineer: WV, 2002
- Professional Engineer: GA, 2003
- Professional Engineer: FL, 2007

CONTACT INFORMATION

Thompson & Litton
1105 Mercer Street
Princeton, West Virginia 24740
Phone: 304-425-9555
Fax: 304-425-9557
E-mail: manderson@t-l.com

Chester Brook Academy – paving, grading, and drainage plans along with permitting for 10,000 sq. ft. day care facility in Port St. Lucie, Florida.

Meadow Bridge Sewer Improvements Project for the Town of Meadow Bridge, West Virginia.

Meadow Creek Sewer Extensions and Plant Replacement Project for the Meadow Creek Public Service District in Meadow Creek, West Virginia.

Mercer/Summers Phase IV-B Waterline Extension for Oakvale Road PSD – 12.5 miles of water main, storage tank, booster stations, and pressure reducing stations near Elgood, West Virginia.

Mercer/Summers Phase IV-A Waterline Extension for Oakvale Road PSD – 8 miles of water main, storage tank and pressure reducing stations near Oakvale, West Virginia.

Peacock Canal Relocation and Maintenance – included stream restoration and relocation for 3,000-acre land development in Port St. Lucie, Florida.

Relocation of Water Lines along McDowell Street and Riverside Drive for the City of Welch, West Virginia – included transmission main relocations and all appurtenances.

Renovations and Upgrades to the Welch Water Treatment Plant for the City of Welch, West Virginia – included a four-cell gravity filter, transmission main relocation, roof replacement, and other various renovations.

Sanitary Sewer Evaluation Survey for the City of Gary Wastewater Collection and Treatment System, Gary, West Virginia – included evaluation of collection and treatment system and preparation of final SSES report, smoke testing report, in-house GPS manhole location mapping, and flow monitoring report.



Matthew P. Anderson, PE

SENIOR ENGINEER



EDUCATION & TRAINING

- Bachelor of Science, Civil Engineering Technology, Bluefield State College, 1998
- Bachelor of Science, Architectural Engineering Technology, Bluefield State College, 1999
- Master of Science, Civil Engineering, Ohio University, 2016

REGISTRATION

- Professional Engineer: VA, 2005
- Professional Engineer: WV, 2009

CONTACT INFORMATION

Thompson & Litton
1105 Mercer Street
Princeton, West Virginia 24740
Phone: 304-425-9555
Fax: 304-425-9557
E-mail: manderson@t-l.com

Matthew Anderson, PE, is a 1998 graduate of Bluefield State College receiving a Bachelor of Science Degree in Civil Engineering Technology, a 1999 graduate of Bluefield State receiving a Bachelor of Science Degree in Architectural Engineering Technology, and a 2016 graduate of Ohio University receiving a Master of Science Degree in Civil Engineering. He has 21 years of experience in the design and construction of engineering projects. Since joining T&L, Matthew has played a major role in the preliminary and final design of various water, wastewater, site and infrastructure development projects.

As the Project Engineer, Matthew will lead the planning and development of design concepts and alternatives and will direct the design engineers and technicians who develop design details and construction documents. He and his support personnel will attend meetings and coordinate with regulatory agencies, as necessary.

The following is a sampling of his project-related experience:

Cavitts Creek Alternative On-site Sewer Project for Tazewell County, Virginia – Gravity sewer design, layout, construction engineering, and project management for Virginia pilot project AOSS by EPC America at the Cavitts Creek Park in Tazewell County, Virginia.

Ingram Branch Sewer Project – Gravity sewer design on portions of the project.

Lindside Sewer Extension for Red Sulphur PSD – Gravity sewer design and permitting on project.

Phase 2A – Johnson Branch / North Page Sewer Project for Page-Kincaid PSD – 2.9 miles of gravity sewer, 4.2 miles of forcemain, grinder stations, and pump stations near Johnson Branch in Fayette County, West Virginia.

Sewer Upgrade Project for Red Sulphur PSD – Gravity sewer design on project.

Original Pocahontas Trail – Trailhead design for Tazewell County and Tazewell County PSA – Preliminary utility extension design, permitting for project, project management for trailhead installation in Boissevain, Virginia.

Cowen Industrial Park – Layout and design of utilities for project, including 1 mile of water mains, 0.6 miles of sewer collection mains, and one water storage tank.

Giles County Industrial Park – Preliminary layout and design of utilities for all three phases of the project, including 2.5 miles of water mains, 1.6 miles of sewer collection mains, a pump station, and a water storage tank.



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Darrell Brian McGough, PE

SENIOR PROJECT ENGINEER

Brian McGough, PE, is a 1998 graduate of Virginia Tech receiving a Master of Science Degree in Civil Engineering, and a 1991 graduate of Virginia Tech receiving a Bachelor of Science Degree in Aerospace Engineering. He has 21 years of experience in the design and construction of engineering projects. Since joining T&L, Brian has played a major role in the preliminary and final design of various water, wastewater, site and infrastructure development projects.

As the Project Engineer, Brian will lead the planning and development of design concepts and alternatives that define the PER. He will also coordinate with regulatory agencies.

The following is a sampling of his project-related experience:

EDUCATION & TRAINING

- Master of Science, Civil Engineering, Virginia Polytechnic Institute & State University, 1998
- Bachelor of Science, Aerospace Engineering, Virginia Polytechnic Institute & State University, 1991

REGISTRATIONS

- Professional Engineer: VA, 2002

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers

CONTACT INFORMATION

Thompson & Litton, Inc.
P.O. Box 1307
103 East Main Street
Wise, Virginia 24293
Phone: 276-328-2161
Fax: 276-328-1738
bmcgough@T-L.com

Claypool Hill Wastewater Treatment Plant - Interim Plan/Update and Preliminary Engineering Report

Tazewell County Public Service Authority, Richlands, Virginia.

Claypool Hill Wastewater Treatment Plant - .35 MGD to .70 MGD Expansion

Tazewell County Public Service Authority, Tazewell County, Virginia. Project Engineer.

Northern Tazewell County Wastewater Treatment Plant

Tazewell County Public Service Authority, Tazewell County, Virginia. Project Engineer.

Holston Regional Sewer System Wastewater Treatment Plant Preliminary Engineering Report

Scott County Public Service Authority, Scott County, Virginia. Project Engineer.

Deerfield Correctional Center Wastewater Treatment Plant

Moseley Architects/VDOC, Southampton, Virginia. Project Engineer.

Gate City/Holston Regional Wastewater Treatment Plant

Scott County Public Service Authority, Scott County, Virginia. Project Engineer.

Big Rock/Conaway Wastewater Treatment Plant Retrofit/ Upgrade Preliminary Engineering Report

Buchanan County Public Service Authority, Buchanan County, Virginia.

Bland Correctional Center Wastewater Treatment Plant

English Construction Company, Inc./Virginia Department of Corrections, Bland County, Virginia. Project Engineer.

Conaway/Big Rock Wastewater Treatment Plant

Buchanan County Public Service Authority, Buchanan County, Virginia.

Haysi Wastewater Treatment Plant

Dickenson County Public Service Authority, Dickenson County, Virginia. Project Engineer.

Wastewater Treatment Plant Rehabilitation

Town of Pound, Virginia. Project Engineer.

River North Correctional Center Wastewater Investigation

Virginia Department of Corrections, Independence, Virginia. Design Engineer.



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& LITTON**



Jeremiah W. Tuggle, PE

DIRECTOR OF CIVIL/SITE ENGINEERING

Jeremiah Tuggle, PE, is a 2008 graduate of Bluefield State College receiving a Bachelor of Science degree in Civil Engineering Technology, and a 2005 graduate of Concord University receiving a Bachelor of Science Degree in Education. Jeremiah has 12 years of experience in the design and construction of engineering projects. Since joining T&L in 2009, he has played a key role in the preliminary and final design of a variety of development projects for multiple civil engineering and architectural projects.

As the Director of Civil/Site Engineering, Jeremiah will gather and evaluate project data, provide recommendations, and develop the design details and construction documents.

The following is a sampling of his project-related experience:

EDUCATION & TRAINING

- Bachelor of Science, Education, Concord University, 2005
- Bachelor of Science, Civil Engineering Technology, Bluefield State College, 2008

REGISTRATIONS

- Professional Engineer: VA, 2015
- Professional Engineer: WV, 2015

CONTACT INFORMATION

Thompson & Litton, Inc.
726 Auburn Avenue
Radford, Virginia 24141
Phone: 540-633-1897
Fax: 540-633-1896
jtuggle@T-L.com

Claypool Hill Wastewater Treatment Plant - .35 MGD to .70 MGD Expansion

Tazewell County Public Service Authority, Tazewell County, Virginia. Design Engineer.

Conaway/Big Rock Wastewater Treatment Plant

Buchanan County Public Service Authority, Buchanan County, Virginia. Design Engineer.

New River Valley Regional Wastewater Study

New River Valley Planning District Commission, New River Valley Virginia. Design Engineer.

Sewer Collection System Maintenance and Rehabilitation Plan and Revised Wastewater Implementation Plan

City of Waynesboro, Virginia. Design Engineer.

Town of Glen Lyn Wastewater Treatment Plant Upgrade

Town of Glen Lyn, Virginia. Design Engineer.

Wastewater Treatment Plant UV Replacement

Town of Rocky Mount, Virginia. Design Engineer.

Wastewater Treatment Plant - Waynesboro Digester Classifier Screw

City of Waynesboro, Virginia. Design Engineer.

Wastewater Treatment Plant Digester Cover Replacement and Gas Dryer Installation

City of Waynesboro, Virginia. Design Engineer.

Water and Sewer System Evaluation

New River Valley Planning District Commission. Design Engineer.

Wastewater CIP Inflow and Infiltration Projects S-1 through S-18

City of Waynesboro, Virginia. Construction Contract Administrator.

Asset Management & Capital Improvements Plan

Buchanan County Public Service Authority, Buchanan County, Virginia. Design Engineer.

Birmingham Sewer Extension

Town of Richlands, Virginia. Design Engineer.

Scuffling Hill Sewer Improvements

Town of Rocky Mount, Virginia. Design Engineer.

Stephens Sewer Extension

Wise County Public Service Authority, Wise County, Virginia. Design Engineer.



References

Oakvale Road Public Service District
Ms. Pamela Browning, General Manager
P.O. Box 1061
Princeton, West Virginia 24740
304-487-2750

Mr. George Dean
Town of Pound
P.O. Box 880
Pound, Virginia 24279
276-796-5188

Town of Alderson
Mayor Travis Copenhaver
P.O. Box 179
Alderson, West Virginia 24910
304-445-2916

Mr. Brian McReynolds
City of Waynesboro
503 West Main Street, Suite 203
Waynesboro, Virginia 22980
540-942-6546

City of Welch
Ms. Reba Honaker, Mayor
88 Howard Street
Welch, West Virginia 24601
304-436-3113

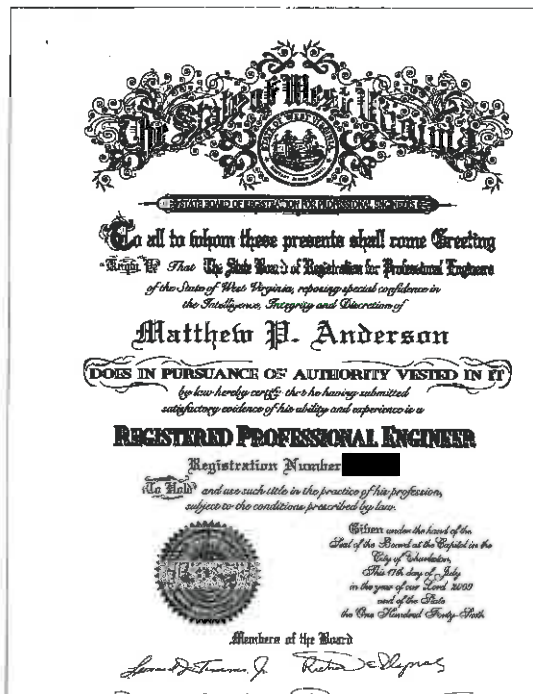
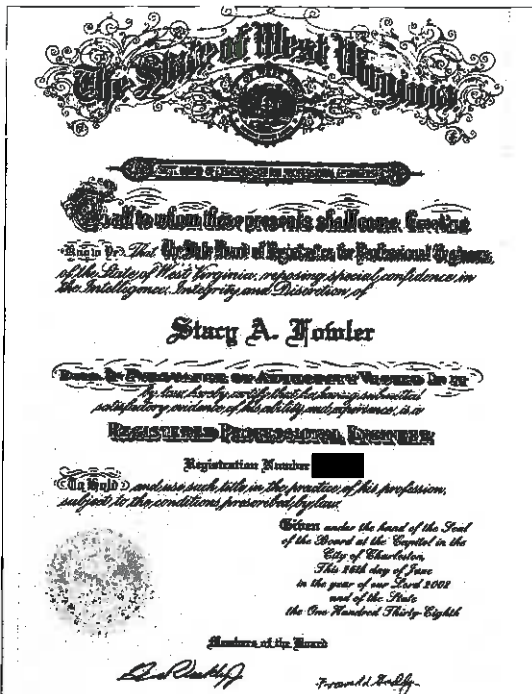
Mr. Dahmon Ball
Tazewell County Public Service Authority
P.O. Box 190
North Tazewell, Virginia 24630
276-988-2243



THOMPSON & LITTON EST. 1956

Copies of staff certifications.

03



Your ACTIVE PE renewal fee has been received...

Your ACTIVE PE renewal fee has been received. Your pocket card indicating you are entitled to practice engineering in West Virginia until the actual expiration date may be checked and used unless invalidated as a result of Board audit of your renewal form or formal disciplinary action.

IMPORTANT REMINDERS:

- Please include your WV ACTIVE PE license number on any correspondence to this office.
- To use this license as a pocket card, please cut along the dotted line and laminate if desired.
- You are required to immediately notify the Board, in writing, of the following: loss or theft of license or seal; any name change; any address change; or any employment change.

West Virginia State Board of Registration for Professional Engineers
 300 Capitol Street, Suite 210
 Charleston, West Virginia 25302
 504-538-3534 Phone
 800-524-5270 Toll Free
www.wvpsbd.org

THIS IS ONE FORM OF YOUR RENEWAL RECEIPT

PLEASE SAVE THIS FOR YOUR RECORDS

Date of Renewal: December 12, 2015
 Amount Paid: \$762.00



This is to certify that the above named PE, RESIDUAL, OR EXPIRED has met the requirements of the WV PE Act and is entitled to practice engineering in the State of West Virginia.

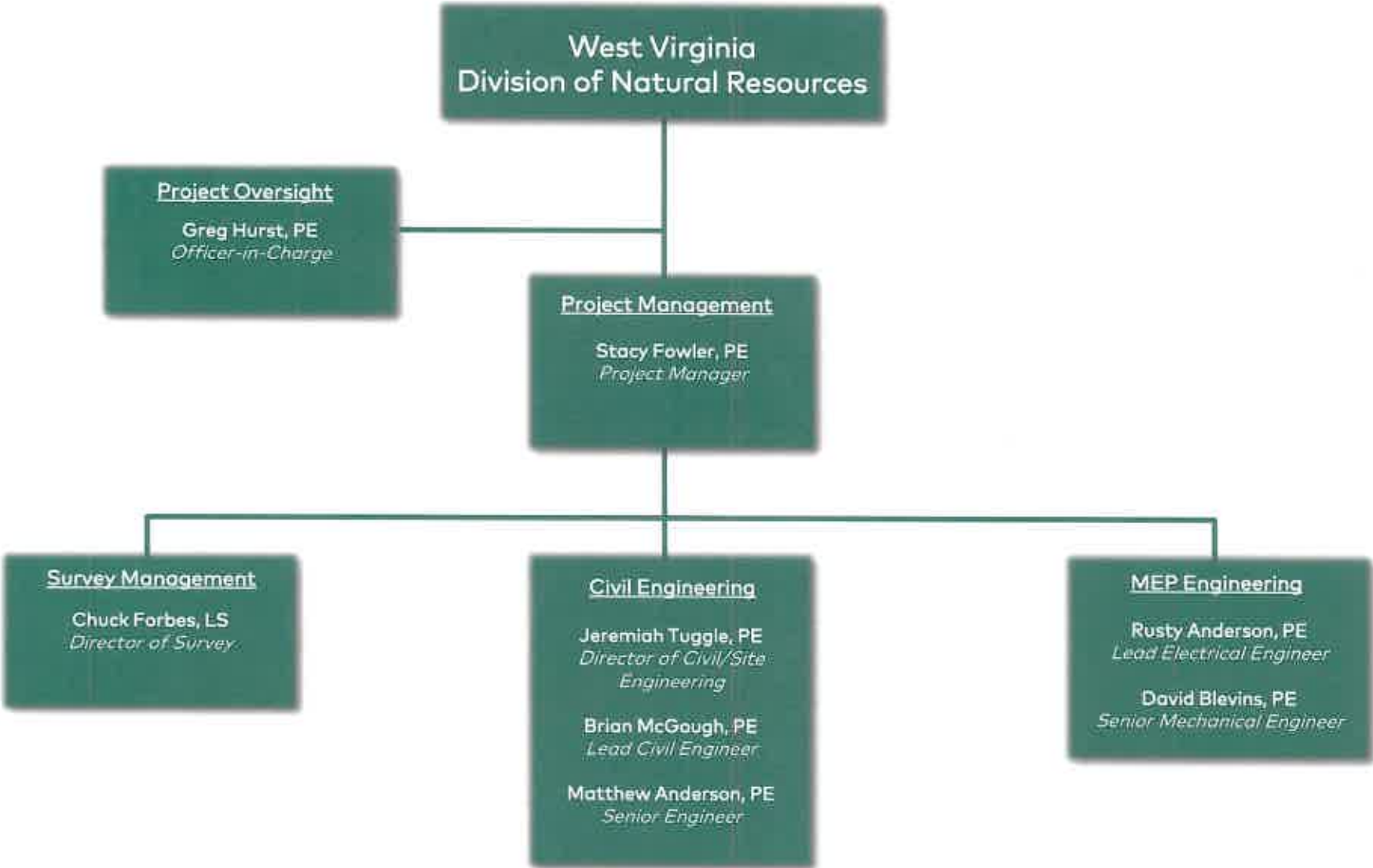
RUSSELL M. ANDERSON
 [REDACTED]

Search: Details

Name: JEREMIAH WESLEY TUGGLE
 WV Professional Engineer: PE License Number: [REDACTED]
 PE License Status: Active
 PE Issue Date: 08/24/2015
 PE Expiration Date: 12/31/2020
 Continuing Education Claim: Qualifying Hours from Last Renewal or Reinstatement: 33.00
 Carryover Hours for Next Renewal: 3.00
 Last Renewal or Reinstatement Date*: 12/27/2018
 WV Engineer Intern: EI Certification Number: [REDACTED]
 EI Issue Date: 01/11/2011
 Primary Address of Record: [REDACTED]
 Primary Employer of Record: THOMPSON & LITTON
 726 AUBURN AVENUE
 RADFORD, VA 24141
 * This date reflects the most recent license renewal (or reinstatement) date for this licensee. Continuing education hours earned prior to this date may not be used for future renewals.

This data was retrieved on 2/18/2019.

Proposed Staffing Plan





Descriptions of past projects.

Please find descriptions of T&L's similar past projects on the following pages.



THOMPSON
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West Virginia Wastewater Experience

Client: New Haven Public Service District
Location: Fayette County, West Virginia
Project: Planning, design and construction administration for construction of a green wastewater collection system with common septic tanks and a 22,000-gallon per day Orenco system

Est. Cost: \$5,172,127
Status: Operational

Contact: Mr. Kenny Hayes, Chairman (304) 658-4385
Address: New Haven Public Service District
84 Jarrett Court
Fayetteville, West Virginia 25840

Client: Town of Athens
Location: Mercer County, West Virginia
Project: Phase I and II 500,000 gallon per day sequencing batch reactor wastewater plant and associated collection lines to achieve compliance with State of West Virginia Consent Decree.

Est. Cost: \$3,800,000
Status: Phase I Complete

Contact: Mr. Robert Richardson, Former Mayor (304) 384-3525
Address: P.O. Box 458
Athens, West Virginia 24712



Client: Big Bend Public Service District
Location: Summers County, West Virginia
Project: Planning, design and construction administration for 20,000 gpd extended aeration plant and related sewers serving the Pine Hill Subdivision.

Est. Cost: \$300,000
Status: Complete

Contact: Mr. Richard Halloran, Chairman (304) 466-5111
Address: Big Bend Public Service District
P.O. Box 114
Talcott, West Virginia 24981



West Virginia Wastewater Experience

Client: Big Bend Public Service District
Location: Summers County, West Virginia
Project: Planning, design and construction administration for 10,000 gpd extended aeration plant and related sewers serving the Pence Springs Hotel and Restaurant.

Est. Cost: \$150,000
Status: Complete

Contact: Mr. Richard Halloran, Chairman (304) 466-5111
Address: Big Bend Public Service District
P.O. Box 114
Talcott, West Virginia 24981

Client: Meadow Creek Public Service District
Location: Summers County, West Virginia

Project: Meadow Creek Wastewater Treatment Plant Replacement and Sewer Line Extensions. Includes a new 40,000 gpd wastewater treatment plant to replace the existing treatment plant along with sewer line extensions to serve 24 additional customers.

Est. Cost: \$1,500,000
Status: Complete

Contact: Mr. Robbie Richmond, Operator (304) 466-2201
Address: Meadow Creek PSD
PO Box 64
Meadow Creek, WV 25977

Client: City of Welch, West Virginia
Sanitary Board

Location: Welch, West Virginia

Project: Complete Design and Construction period services for a wastewater collection system extension to serve the Tom's Mountain area.

Est. Cost: \$1,300,000
Status: Complete

Contact: Mayor Reba Honaker (304) 436-3114
Address: 88 Howard Street
Welch, West Virginia 24801

Client: City of Welch, West Virginia
Sanitary Board

Location: Welch, West Virginia

Project: Complete Design and Construction period services for new wastewater collection system and treatment plant for city and surrounding areas to achieve compliance with Federal Consent





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West Virginia Wastewater Experience

Est. Cost: Phase I - \$13,100,000
Status: Operational 1998

Est. Cost: Phase II - \$8,000,000
Status: Complete

Contact: Mayor Reba Honaker (304) 436-3114
Address: 88 Howard Street
Welch, West Virginia 24801

Client: Oakvale Road Public Service District
Location: Gardner, West Virginia
Project: Complete Design and Construction period services for new wastewater collection system to serve the Gardner Road area of Mercer County.

Est. Cost: \$1,259,000
Status: Complete

Contact: Pamela Browning, General Manager (304) 487-2750
Address: 386 Athens Road
Princeton, WV 24740

Client: Center Public Service District
Location: Wyoming County, West Virginia
Project: Wastewater Plant Improvements including new decanters and UV disinfection system.

Est. Cost: \$300,000
Status: Complete

Contact: Mr. Brian Alred, Manager (304) 732-8236
Address: Box 760
Pineville, West Virginia 24874



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West Virginia Wastewater Experience

Client: City of Hinton
Location: Summers County, West Virginia

Project: Sandstone Sewer System. Includes gravity sewer system and new wastewater treatment plant to serve the Sandstone community and National Park Service Visitor Center.

Est. Cost: \$1,400,000
Status: Complete

Contact: Mr. Joe Blankenship, Mayor (304) 466-3255
Address: City of Hinton
322 Summers Street
Hinton, West Virginia 25951

Client: Bramwell Public Service District
Location: Mercer County, West Virginia
Project: Wastewater Collection/Treatment Facilities

- Collection System including gravity, vacuum and pressure sewers
- Aeration System
- Clarifiers
- Control Building/Disinfection
- Project objectives of meeting compliance with State of West Virginia Consent Decree



Est. Cost: \$4,300,000
Status: Complete

Contact: Region I Planning and Development Council
Address: P.O. Box 1442
Princeton, West Virginia 24740

Client: City of Princeton
Location: Mercer County, West Virginia

Project: **Phase I** - Upgrade of wastewater treatment plant, including new clarifiers, solids handling and treatment units.
Phase II - Expansion of wastewater treatment plant.

Est. Cost: \$1,200,000 - Phase I
\$7,000,000 - Phase II
Status: Phase I - Complete
Phase II - Currently in Design



Contact: Mr. Mike Saffel, Former General Manager (304) 921-2999
Address: Princeton Sanitary Board
South Wickham Avenue
Princeton, West Virginia 24740



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West Virginia Wastewater Experience

Client: City of Bluefield
Location: Mercer County, West Virginia
Project: New collection lines, force mains and pump stations along John Nash Boulevard and I-77, to serve area east of Bluefield. General engineering services for wastewater and stormwater systems.

Est. Cost: Phase I - \$350,000
Phase II - \$1,200,000
Status: Phase I - Complete
Phase II - Planning complete

Contact: Mr. Ron Dodson, Assistant General Manager (304) 325-3681
Address: Bluefield Sanitary Board
Municipal Building
P.O. Box 998
Bluefield, West Virginia 24701

Client: Logan County Public Service District
Location: Logan, West Virginia
Project: Phase II-A wastewater collection system project for communities of West Logan and Hedgeview.

Est. Cost: \$7,300,000
Status: Complete

Contact: Mr. William Baisden, General Manager (304) 946-2641
Address: P.O. Box 506
Logan, West Virginia 25601

Client: Mercer County Commission
Location: Mercer County, West Virginia
Project: Comprehensive countywide sewer study for expansion and upgrade of wastewater facilities.

Est. Cost: Not applicable
Status: Complete

Contact: Mr. Mike Vinciguerra (304) 487-8306
Address: 1501 West Main Street
Princeton, West Virginia 24740



Claypool Hill Wastewater Treatment Plant Expansion

Scope of the Project: In August 2011, the Tazewell County Public Service Authority (TCPSA) received a Notice of Violation from the Virginia Department of Environmental Quality (DEQ) for the facility due to visible plumes from the plant's river discharge point and because of violations of contaminant levels set by the facility's discharge permit. After meeting with the DEQ and in order to address the short and long-term operations at the plant, the TCPSA engaged T&L in March 2012 to provide inspections, evaluations and recommendations for plant operations, as well as to update the Preliminary Engineering Report to address a stringent ammonia limit imposed on the TCPSA by the DEQ. The PER recommended an upgrade and expansion of the existing WWTP from 0.35 MGD to 0.75 MGD capacity to serve the future needs of the Claypool Hill and Wardell service areas.

Project Funding: T&L provided assistance to the TCPSA in securing the project funding with included multiple funding agencies, each with differing requirements. Funding agencies included:

DEQ/RLF (LOAN)	\$8,255,550
DEQ/RLF (GRANT)	\$1,000,000
SWVA W/WW	\$400,000
LOCAL	<u>\$252,520</u>
TOTAL	\$9,908,070

In July 2012, T&L began final design phase services and **construction was completed** in October 2015 at a **cost of \$5.7 Million**, which was approximately **\$1.0 Million under T&L's engineering estimate of \$6.7 Million and 1.6% above the award amount**. One important step taken by T&L, which was a big factor in the success of the project, was the use of a pre-qualification process prior to the formal bidding process. This provided the TCPSA with reasonable assurance of a pool of bidders with the experience and capacity to undertake a specialized wastewater treatment plant. Additionally, a major portion of the wastewater treatment plant equipment was procured outside of the contractors contract, which saved the TCPSA with markups.

The entire project was completed \$1,535,019.21 under the TCPSA's budget.





Westside Wastewater Treatment Plant Upgrade and Expansion

Working for the Bluefield Sanitary Board, T&L prepared a Preliminary Engineering Report to evaluate several treatment process alternatives for the upgrade and expansion of the existing 3.5 MGD wastewater treatment plant. T&L's siting studies concluded that the existing plant site could accommodate the expansion in the most cost effective manner. Subsequently, T&L designed a 5.3 MGD complete mix activated sludge process advanced tertiary treatment plant with full nitrification as recommended in the conclusions and recommendations of the report. Preliminary work also included an Inter-municipal Agreement with Rate Analysis between Bluefield, Virginia and Bluefield, West Virginia. T&L's services included planning, design, and construction administration. T&L assisted the Board in obtaining DEQ Revolving Loan Fund monies for the project which involved amendments to Virginia State law to facilitate financing in West Virginia.



The firm provided professional services to the Bluefield Sanitary Board to revise the effluent limits established by the Virginia Water Control Board for the Westside Wastewater Treatment Plant. This project included developing a stream model of the Bluestone River following the removal of a dam that was located below the outfall line of the Westside plant. The upgrade/expansion project was completed for a cost of \$6.7 Million.





Gate City/Holston Regional Wastewater Treatment Plant

The Scott County Public Service Authority engaged the services of T&L to provide engineering services for the planning, design, and construction of necessary upgrades to the Holston River Regional Wastewater Treatment Plant.

Prior to the design, T&L project engineers prepared a Preliminary Engineering Report outlining the feasibility and need for the upgrades to the plant and the related cost associated with the project. Upon submittal of recommendations and approval from required agencies, T&L proceeded with the design of upgrades to the existing 0.3 MGD Holston River Wastewater Treatment Plant to a capacity of 1.25 MGD. The wastewater treatment plant upgrade included a new mechanical bar screen device at the plant headworks. This upgrade also included an interconnection of the existing Gate City and Holston Regional sanitary sewer systems, and the subsequent abandonment/closure of the existing Gate City Wastewater Treatment Plant. This project was later revised to include the redesign of the Gate City pump station, force main redesign, peer review response and pre-selection and negotiation of equipment prior to project bidding.

In addition to the report and design phase of the project, T&L provided various additional services including geotechnical engineering, topographic and plat/easement surveying, multiple field investigations, preparation of an Operations and Maintenance Manual, and development of a Sludge Disposal Plan. T&L also acted as Contract Administrator for the construction phase of the project, overseeing the bidding/advertisement phase, contract awards, and provided a Residential Project Representative to conduct inspections during the construction of the plant upgrade.

The project was completed for a cost of \$6.2 Million.





Deerfield Correctional Center Facility Wastewater Treatment Plant

This Virginia Department of Corrections project consisted of an upgrade of a 0.35 MGD average daily flow activated sludge plant to a 0.45 MGD average daily flow sequencing batch reactor plant with new tertiary filtration. Two new Sequencing Batch Reactor (SBR) basins and a post-equalization basin were installed at the plant to replace the existing continuous activated sludge process. The plant was also provided with two new tertiary filtration units and with UV units to replace the existing chlorine disinfection system. The aeration basins at the plant were converted for use as equalization volume upstream of the new SBR basins. The clarifiers were converted to be used as new digesters.



The new SBR and post-equalization basins, tertiary filtration units and UV units were installed just outside of the footprint of the existing facility but within Virginia Department of Corrections property. This allowed a significant portion of the project to be constructed without any impact to operations at the plant. After construction of these new units, the activated sludge mass was pumped from the existing aeration basins and secondary clarifiers to the new SBRs. The aeration basins were then taken out of service to allow upgrade for usage as additional equalization volume. Also at this time, the secondary clarifiers were removed from service to allow upgrades for use as additional aerobic digester volume. The existing traveling filtration unit was abandoned.

The project was completed for a cost of \$4.6 Million.





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City of Waynesboro Sewer Projects

The City of Waynesboro's existing wastewater collection and treatment system consists of a wastewater treatment plant (WWTP) which is designed to treat an average daily flow of six (6) million gallons per day (currently permitted for four (4) million gallons per day), eight (8) sewage pump stations, approximately 124 miles of gravity sanitary sewer mains, and approximately 2,800 manholes. The majority of the existing sanitary sewer system was constructed over fifty (50) years ago with the sanitary sewer mains being comprised of mostly vitrified clay piping, which is a strong but brittle material. Additionally, the mains were constructed in short-segments with gaskets seldom being used. This type of piping material and construction creates a high potential for leaks, which typically leads to system-wide Inflow and Infiltration (I&I) problems. As a result of this, the City has been experiencing I&I problems for several years due to the aging sewage collection system. Since the mid 1990's, the City has been under a Virginia Department of Environmental Quality (VDEQ) consent order to perform sewage collection system improvements. The latest consent order required the development of a new plan and schedule of I&I corrective actions based on new collection system studies.

T&L was commissioned by the City in 2009, under a retainer agreement, to develop the Wastewater CIP Inflow and Infiltration Improvements Study (Study) in accordance with the consent order and to provide a SewerCAD model of the City's wastewater system. The Study generally included the following elements:

- a. List of capital improvements to be outsourced
- b. List of maintenance projects to be performed by in-house staff
- c. Schedule for construction or completion of projects
- d. Implementation plan for potential projects
- e. Mapping showing the locations of proposed projects
- f. Estimated cost to rehabilitate the problem areas

To begin the work in completing the Study, T&L conducted a comprehensive review of existing wastewater collection and treatment system data which included the following:

- Operations and maintenance records
- Inspection and construction reports
- Topographic information
- Manhole inspection reports
- Hydrologic information
- Flow records from treatment works
- Flow monitoring data for base and wet weather flows
- Pump station information
- Documented bypasses and overflows
- Odor complaints
- Corrosion data
- Rainfall records and groundwater monitoring data

In addition to review of the existing data, T&L performed a system evaluation survey consisting of a systematic examination of the existing sanitary sewer system to determine specific locations and flow rates for all identifiable sources of I&I. The system evaluation allowed T&L to isolate problem areas and determine the general physical condition of the sewer system. In conjunction with this work, T&L also updated the City's existing sewer system model and conducted a capacity evaluation to assist in determining proposed system upgrades and improvements.

City of Waynesboro Sewer Projects (Continued)

Data gleaned from the review of the City's existing data, system evaluation and sewer modeling efforts was evaluated and prioritized, yielding a detailed list of nineteen (19) recommended system improvements to include specific sewer replacement and rehabilitation projects which were presented in the Study. In addition, these identified replacement and rehabilitation projects were prioritized based on the annual cost per gallon of I&I removed from the system for use by the City for capital improvement planning, budgeting, and financing applications to applicable funding agencies. This list of prioritized projects was further utilized to develop a Five-Year Wastewater Capital Improvements Plan Schedule (CIP Schedule) which has been aggressively pursued by the City since the completion of the Study.

Over the course of the past seven (7) years, the City has completed ten (10) of the projects identified in the Study and CIP Schedule (Projects S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, S-9 and S-18) with the next two (2) prioritized projects (S-10 and Pine Avenue) heading into construction. Furthermore, T&L is currently beginning design work for the next prioritized project (S-11) with the design effort scheduled to be completed by early 2018. Having had the privilege of assisting the City with the design, bidding/advertising and construction administration for all of the aforementioned projects, T&L has developed an extremely thorough understanding of not only the City's sewer infrastructure but also their internal procedures and processes stretching across multiple departments.

The efforts undertaken by the City over the past seven (7) years on reducing its I&I have been extremely successful as the City has been able to significantly reduce the number of overflows and bypasses during wet and peak flow events from their system, as well as replace/rehabilitate approximately 10 percent of their entire system. The total rehabilitation work done to the City's sewer collection system to achieve this result (including Projects S-10 and Pine Avenue) is listed below:

- In-Situ Lining of 18-inch Sewer – 915 LF
- In-Situ Lining of 12-inch Sewer – 6,855 LF
- In-Situ Lining of 10-inch Sewer – 6,545 LF
- In-Situ Lining of 8-inch Sewer – 21,709 LF
- In-Situ Lining of 6-inch Siphon – 2,730 LF
- Sewer Point Repair – 1,060 LF
- Manhole Rehabilitation – 1,611 VF
- Sewer Line Replacement – 20,085 LF



I&I Remediation - City of Waynesboro

The City has been extremely successful to date in meeting and exceeding the requirements of the active VDEQ Consent Order and is currently looking to the future with regards to their continued efforts in reducing I&I in their sewer collection system. To assist the City with moving their I&I initiatives forward, T&L worked with the City to present the final flow data and summary of the ten (10) total projects completed under the current CIP Schedule to VDEQ. In addition to the final summary report, T&L assisted the City with the production of a new Wastewater Capital Improvements Plan to update the projects list, as well as append newly identified projects for consideration by the City to the current Five Year CIP Schedule. This update to the Wastewater CIP also included a Maintenance Plan for the City's existing infrastructure. These specific requirements were identified in the 2014 VDEQ Amendment to the Consent Order and are actively being pursued by the City at this time.



Baptist Valley Sewer

T&L was commissioned by the TCPSA to provide preliminary engineering services for the Baptist Valley community located to the northwest of the Town of Tazewell, Virginia. In 2006, an updated Preliminary Engineering Report (PER) was prepared, and final design proceeded in early 2008. **A total of 682 new connections were served**, located near Cavitt's Creek and the Clinch River. A PER was prepared to determine the feasibility and constructability of the project. The PER determined the following about the project:

- Aproximately **four miles of 10-inch line, almost 10 miles of 8-inch gravity sewer, and three pump stations were required to serve the community.**
- The Southeast Rural Community Assistance Project, Southern Rivers Watershed Enhancement Program, Southwest Virginia Water/Wastewater, Department of Housing and Community Development (Community Development Block Grant) and Rural Development Grant/Loan funds were obtained for the project.

Following is a description of the project as designed:

- After surveying and design were completed, approximately 21,600 feet of 10-inch gravity sewer was required, 51,700 feet of 8-inch gravity sewer, two grinder pumping stations, and one sewage pumping station were included. Also, approximately 30,600 feet of 4-inch service lateral is included in the project.
- Flow from the Baptist Valley system is treated by the Town of Tazewell Wastewater Treatment Plant. A portion of this flow was pumped to the plant for treatment, but the majority is transferred by gravity into the treatment plant.
- Approximately 20 percent of the households served by this system are Low to Moderate Income, qualifying this project for DHCD funding.

There were several environmental concerns during the design and construction of this project:

- The project is located in the Clinch River, one of the most biodiverse streams in the United States, harboring 29 rare mussel species and 19 rare fish species.
- Intense coordination of construction work was conducted with state and federal conservation agencies requiring careful control of construction in or near the Clinch River and its tributaries to protect this valuable biological resource.

This has been a very successful project for the TCPSA, providing sewer service to about 1,300 Tazewell County residents. The total project cost for the entire project was approximately \$10,200,000, and was completed in 2011.





Stephens Sewer Line Extension

T&L was commissioned by the Wise County Public Service Authority (WCPSA) to provide preliminary and final engineering services for the Stephens community located west of the Town of Wise, Virginia. Seventy-eight new connections were served. This project is an extension to the Guest River/Stephens interceptor project, which provides sewer service to the area, but did not provide service to all the potential customers.

A Preliminary Engineering Report (PER) was prepared to determine the feasibility and constructability of the project.

The PER determined the following about the project:

- The collection system will consist of 12,640 feet of 8-inch diameter gravity lines, 68 service connections, and 9,350 feet of 4-inch diameter service lateral lines.
- The Department of Housing and Community Development, Community Development Block Grant and Rural Development Grant/Loan funds were obtained for the project.

Following is a description of the project as designed:

- After final design, the project consisted of 8,800 feet of 8-inch 1,600 feet of 6-inch gravity sewer and appurtenances.
- Two railroad crossings were required in the final design of the project due to flat terrain and deep construction of sewer lines.

When the bids were opened for the project, project funds exceeded the bid price substantially. The project budget was reduced, lowering the loan and subsequent annual repayment amounts.

The project is currently under construction and should be complete in 2014. The total project cost for the entire project is anticipated to be \$1,512,000.





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Tazewell to Divides Sewer Line Extension

T&L was procured by the Tazewell County Public Service Authority (TCPSA) to prepare a preliminary engineering report (PER) evaluating alternatives to transfer leachate from the existing Tazewell County Landfill to the Town of Tazewell's existing waste water treatment plant (WWTP) in 2014. The aforementioned PER also considered providing wastewater collection services to three (3) service areas located within the project area. The findings of the PER recommended the following improvements:

- Approximately 10 miles of gravity sewer;
- Approximately 1.5 miles of sewer force main;
- Four (4) sewer pump stations; and
- All related appurtenances.

Due to a lack of available funding, the proposed project was divided into four (4) phases. Phase I focused on a direct route from the Tazewell County Landfill to existing wastewater collection infrastructure.

In 2015, T&L was procured by the TCPSA to complete the final design of the Phase I project. The Phase I project consisted of the following:

- Approximately 4 miles of gravity sewer;
- Approximately 1.3 miles of sewer force main;
- Two (2) sewer pump stations; and
- All related appurtenances.

In 2016, the TCPSA/T&L bid the Phase I project. The low bidder was approximately 10% less than the engineer's estimate. A portion of the Phase I project is being funded by the Virginia Clean Water Revolving Loan Fund (VCWRLF).

The project was completed in May 2018.





History of projects that met the owner's budget.

As the engineer of hundreds of wastewater and water projects, T&L has a vast database of actual project costs and schedules that provide an invaluable resource in the establishment of reasonable cost expectations and time requirements early in the planning process. Regarding project budgets, T&L is careful to allocate realistic project contingencies, adjustments for inflation, consideration for the size and complexity of the project (constructability), adjustments for the construction market depending on economic considerations, and adjustments of project costs during the design should the scope of the project change. Additionally, T&L gives careful thought to the development of project bid formats (unit cost versus lump sum, add alternates, etc...). Once a project budget has been established, we embrace this figure as another design component equal in importance to other project objectives. T&L is proud of the track record we have established regarding the successful bid day performance of our water and wastewater projects. However, this success is not accidental, and all parties involved with the design process can share the credit, especially our clients.

Between 2011-2017, T&L completed 22 sewer projects involving both collection and treatment. A summary of these projects is as follows:

- Total Engineers Estimates are \$30.192 Million
- Total Low Bid Amounts are \$25.846 Million
- Total Award Amounts are \$25.846 Million
- Total Award Amounts were 14.4% below Total Engineers Estimates

Between 2011 – 2017, T&L completed 51 water projects varying in size and complexity. A summary of these projects is as follows:

- Total Engineers Estimates were \$63.310 Million
- Total Low Bid Amounts were \$58.602 Million
- Total Award Amounts were \$58.699 Million
- Total Award Amounts were 7.8% below Total Engineers Estimates



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History of projects that have been constructed in the time allotted.

The table shown on the following pages indicates a wide-variety of projects completed in the past several years. T&L takes great care in the development of project schedules for our clients. T&L is proud of the track record we have established regarding the successful performance of our projects. However, this success is not accidental and all parties involved with the design process can share the credit, especially our clients. Once a project schedule has been established, we embrace this as another design component equal in importance to other project objectives.



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Competent and acceptable experience in all expected professional disciplines necessary...

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T&L is a full service A/E firm that provides all of the classic basic disciplines for project development in-house. Below is a list of services T&L can provide the Division.

Civil Engineering Services

- Stormwater design
- Subdivision planning and design
- Road and drainage systems
- Water and sewerage systems
- Site preparation
- Site selection and evaluation
- Parking facilities
- Solid waste management facilities
- Flood/dam structures
- Airport facilities
- Recreational facilities
- Right-of-way and easement acquisition
- Environmental assessment & audits/environmental impact studies
- Underground storage tank studies and remediation
- Land use studies
- A/E expert testimony
- Damage reports and investigations
- Value engineering
- Consultation regarding studies and design performed by others
- Other services as needed

Architectural Services

- A/E pre-planning studies
- Space planning and utilization studies
- A/E feasibility studies and preliminary reports
- New construction
- Additions to existing structures
- Renovation of existing structures
- Roof Replacements
- Adaptive reuse of existing structures
- Handicapped accessibility (ADA)
- Energy efficiency analyses
- Building conditions surveys
- Code compliance
- A/E programming
- A/E cost estimating
- Asbestos inspection & abatement design
- Rendering and 3-D modeling

Structural Engineering Services

- Structural evaluation
- Building analysis
- Structural planning & design
- Environmental structures
- Forensic studies
- Pedestrian bridges
- Parking structures
- Renovations
- Utility structures
- Code review
- Construction contract administration
- Other services as needed

MEP Engineering and Fire Protection Services

- Heating, ventilation, and air conditioning systems (HVAC)
- System and energy efficiency studies analyses
- Code compliance and inspections
- Modeling
- Process piping systems
- Environmental systems
- Construction contract administration
- Water/wastewater facilities
- Building analyses
- Electrical study
- Code reviews
- Highway/outdoor lighting design
- Planning and design of plumbing systems
- Process and fluid flow systems
- Alarm and extinguishing systems
- Fire detection and suppression systems
- Lighting protection systems
- Arc flash studies
- Short circuit studies
- Power systems modeling
- Other services as needed

Surveying Services

- GPS surveys
- Topographic surveys
- Property surveys
- Utility surveys
- Highway surveys