



Public Works Committee Meeting
July 8, 2025 @ 6:30 PM
This meeting is recorded for public record.

Committee Members:

Bernie Flynn, Chair
Sheila Vaccaro
Bryan Travis

Director of Public Works: Donald Edwards
Assistant Director Public Works: Donald Anderson
Wastewater Director: Sean Mitchell
Director of Parks & Recreation: Keith Kurowski
Borough Manager: Sean Metrick

Public Works Committee Meeting:

- I. Call to Order
- II. Announcements
 - A. A public meeting will be held July 29 at 5:30pm in Borough Hall to gather comments on the draft Pollution Reduction Plan and Total Maximum Daily Load Addenda. The plan proposes projects over the next 5 years to reduce flooding and improve rainwater runoff quality.
- III. Reports
 - A. Engineer Report
 - B. Public Works Report
 - C. Wastewater Report
 - D. Parks & Recreation Report
- IV. Old Business
 - A. Approve June 2025 meeting minutes
 - B. Discuss progress on the new Public Works building
- V. New Business
 - A. Motion to approve the Goose Creek Flood Study proposal.
Issue: A comprehensive study on Goose Creek to eliminate the flooding
- VI. Other Business

VII. Adjournment

Visit www.west-chester.com for access to all attachments.

Agendas are posted to www.west-chester.com by noon 3 business days prior to the meeting.

Hoopes Park Racquet Center Improvements

Project Scope

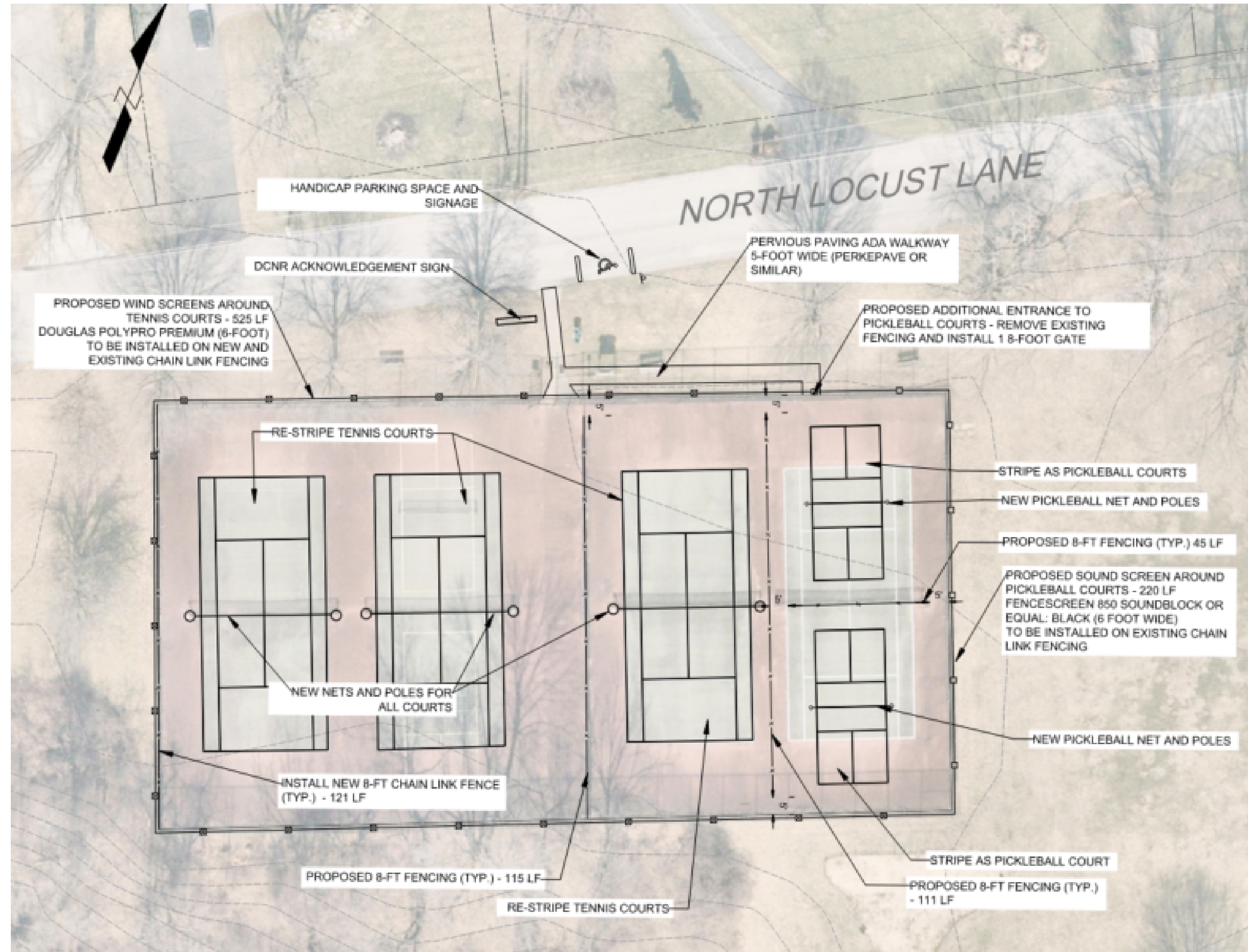
- Repair and resurface courts
- Convert eastern tennis court into 2 pickleball courts
- Install new high performance sport court surface
- Install ADA accessibility including new path, gate, and parking
- Install wind and sound screens

Grant Funding

DCNR - \$137,300
 DCED - \$100,000
 Total Funding - \$237,300

Estimated Construction Cost

\$243,090.21



Goose Creek Green Infrastructure Improvements

Project Scope

Drainage Area #1 - Bioswale

Improve water quality from parking lot stormwater runoff prior to entering Goose Creek

Drainage Area #2 - Rain Gardens

Improve water quality from stormwater inlet located behind the Public Works Building

Drainage Area #3 - Stormwater Bumpouts - Matlack Street

Manage stormwater runoff and improve water quality in two rain gardens prior to stormwater overflow entering the storm sewer system

Parking Lot Paving and Striping

Install new paving, line striping, and wheel stops in the existing parking lot

Grant Funding

ARPA SW&S - \$118,088
 Growing Greener - \$200,747
 Total Funding - \$318,835

Final Project Cost

\$320,058.00





Borough of West Chester

401 East Gay Street ■ West Chester, Pennsylvania ■ 19380

Telephone: 610-692-7574 ■ Facsimile: 610-436-0009

www.west-chester.com

Borough Council

Patrick McCoy, President
Nicole Scimone, Vice President
Bernie Flynn
Lisa Dorsey
Brian McGinnis
Sheila Vaccaro
Bryan Travis

Mayor

Lillian L. DeBaptiste

Borough Manager

Sean Metrick

June 30, 2025

Public Works Department Monthly Report

The following activities occurred during the reporting period:

1. Began the 2025 Paving Project.
2. Received updated proposals for the Goose Creek drainage study.
3. Working with Aqua for the replacement of about 390 lead water services in the Borough.
4. Working on plan to reline brick storm sewers that may be at the end of their useful lives.
5. Finalized the contract documents for the Bicentennial Garage, Level 3, Membrane Project for the Parking Department.
6. Prepared a draft infiltration/inflow (I/I) abatement plan. Discussed flow metering. Will begin cleaning and televising sanitary sewers soon to identify sources of I/I.
7. Began televising storm sewers where we historically found high levels of fecal coliform. Looking for potential illicit discharges.
8. Received a new litter truck.
9. Discussed a plan to eliminate a bottleneck on Cedar Alley near Franklin Street along with re-opening the road.
10. Requested a proposal for architectural and engineering services for a Public Works Building.
11. Ordered new Big Bellies to replace old, unsightly Big Bellies.
12. Working with PECO and its Harmony 5 – Substation project that includes setting utility poles in multiple locations in the Borough.
13. Assisted with various capital improvement projects. Working with PennDOT on the South High Street project from Rosedale to Miner Streets.
14. Assisted with land development and subdivision projects.

15. Cartegraph work order system is operational. Addressing concerns with Cartegraph's reporting functions.
16. Performed all routine work for trash/recycling, fleet maintenance, building maintenance, road maintenance and stormwater facilities maintenance.
17. Responded to service requests from residents, business owners and internal Borough departments such as Parking, Police, Fire and Parks.

Sincerely,

Donald T. Edwards
Public Works Director

Goose Creek Plant
351 Snyder Ave.
West Chester, PA 19382
(610) 696-2320

Ed Jamieson
Superintendent



Sean Mitchell
Wastewater Director

WASTEWATER DEPARTMENT

Taylor Run Plant
795 Downingtown Pike
West Chester, PA 19380
(610) 436-1370

Michael Findley
Superintendent

July 2025 Wastewater Department Report

Goose Creek

Both Primary clarifiers were drained, cleaned and inspected. New rubber scrapers were installed. T-2A had all nuts and bolts and all thread ground off and replaced.

Pumped out all valve chambers and utility manholes in plant.

The two new 2,000-gallon tanks and pumps have been delivered and set. Installation should be completed in the second week of July. Bench testing for Phosphorus removal to begin on July 8.

Avg. Monthly Flow: 0.764 MGD

Taylor Run

Yearly inspection on T6A Final Clarifier. Drained, cleaned and checked the scraper arm and the seals.

Yearly inspection on T3A & T3B Clarifiers. Drained, cleaned, checked bottom scrapers, and replaced scum beach scrapers.

Emptied and cleaned the sodium bisulfite chemical tanks.

Fabricated a fiberglass cover to replace a broken cover on a PECO inground junction box that is on our property and our responsibility.

Avg. Monthly Flow: 0.791 MGD

Pumping Stations

Monthly cleaning and inspections were performed at all four pumping stations. Crews pumped down, hosed out wet wells and bar screen chambers and adjusted floats where needed.

The portable flow meter has been installed in the first manhole to track I/I in the East Bradford interconnections. The second meter should be delivered any day now; it will be used for I/I in Borough lines.



Park Notes and Projects June 2025

Projects can be Capital, grant funded, Rec Fee in Lieu of, or General.

Hoopes Park

Hoopes Park Racquet Center Rehabilitation Project

- The courts are complete.
 - o We have a few “punch list” items to finish up
 - Fence separating pickleball courts, new pathway and entrance to courts need to be finished, and signage.



Marshall Square Park – Projects on the horizon with the FOMSP

- Civil War Memorial area upgrade to historic layout – 2025
 - o Was approved by Council at their March meeting

Everhart Park- No project at current time

Mosteller Park – No projects at current time

Fugget Park – No projects at current time

Horace Pippin Park – Design work has begun on replacement of playground equipment

- Meeting was held with several residents to discuss potential options on 4.24.25
- Concepts has also been vetted through the Recreation Commission
- The concept/apparatus for the new playground is:
 - o “Mesa Verde” by HAGS 8102028 - BM Wood Posts/HPL Panels
 - [UniPlay Mesa Verde | HAGS](#)
 - o This is a budgeted item and we will, most likely, use CoStars for procurement
 - Estimate will be discussed at Finance Committee meetings.
 - Total cost is \$65,386,00

- Includes delivery, removal and disposal of old equipment, and installation.

Kathy McBratnie Park - No projects at current

Greenfield Park – ordered 16 tons of infield mix for the ballfield

Veteran’s Memorial Park - No projects at current time

Barclay Park - No projects at current time

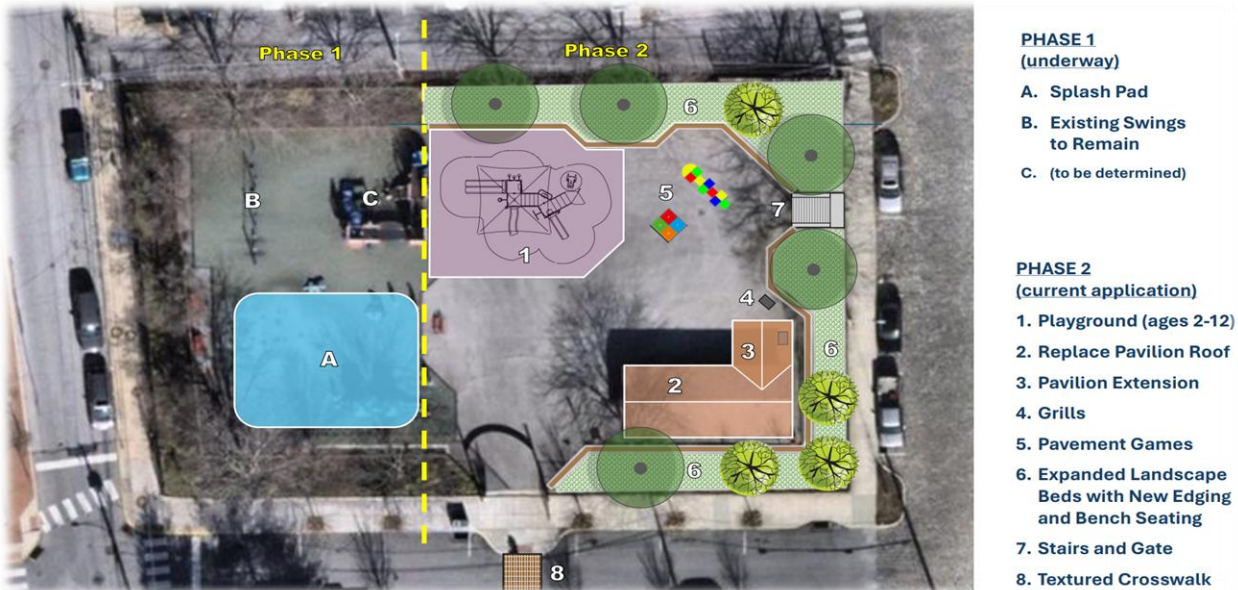
Bayard Rustin Park – We will be relining the basketball courts to add portable pickleball courts (similar to what we had at Hoopes Park). Trying to utilize the park space we have to incorporate as many activities as possible.

- We have already purchased the templates
 - Cost was \$233.18 (plus PW labor and paint) as compared to the lowest quote which was \$3,191.00

John O Green Park –

Fall zone project 2025 and beyond

- We have been working on two grants to revitalize JOG Park.
 - DCED – Greenways, Trails, and Recreation Program grant; submitted 5/30/2025
 - With assistance from Pennoni, the Borough submitted a grant for \$250,000.00 (max amount)
 - Borough match for this \$304,400.00 project would be \$54,400.00k or roughly 18% (and 15% is the minimum match)
 - NOTE* - There was a slight change in pricing as the grantors made a few changes to our grant application
 - This “concept” includes new playground equipment, expanded pavilion, more seating, new grilling area, and games area.
 - Awards for this grant are not expected until Q1 2026



- People, Parks, and Community Foundation (a subsidy of the PA Recreation and Parks Society)- Submitted 5.30.25
 - o The Borough submitted the application for this grant, max amount, \$30,000.00 with no match from the Borough
 - This grant/project aligns with our already budgeted item of replacing the JOG splash pad with updated mechanicals, apparatus, and fall zone.
 - Project cost, with grant funding, \$116,000.00
 - Award for the grant is Sept. 2025 and our project will start/end fall 2025



Park Usages/Rentals

June Park Rentals

Start Date ?
 End Date
 By Date Type

Reservation Overview Report from 06/01/2025 to 06/30/2025

Facility	Reservations	Hours
Barclay Park	2	4:00
Everhart Park	10	46:00
Green Field Park	5	54:00
Hoopes Park	4	28:00
Marshall Square Park	8	50:00
Totals	29	182:00

Events

- *June 8th - 42nd Annual Turks Head Music Festival*
 - o 7 bands, 69 vendors, and approx.. 5,000-6000 in attendance throughout the day
 - o Weather was a bit “iffy” at times, but all in all, this was another successful event.
 - o Parks and Rec had a discussion with FOEP about plans for 2026, mainly regarding Food Trucks, and a plan will be developed to ensure the vitality of the park is not compromised.



- *June 14th - Mini Golf on Gay St.*
 - o Weather was not in our favor and this was the same day as a large rally took place in the downtown, mainly along the High St. corridor.
 - o Since our 18 holes of mini golf was set for all four blocks of the Open-Air Market (9 holes E and 9 holes W), this was an issue.
 - Numbers were certainly not what we expected, but those that participated enjoyed themselves.

- June 26th – Concert at Everhart Park – The Scheirer Project
 - o Again, Mother Nature was not cooperative and the concert only lasted approximately an hour (as compared to 2 hours which was originally expected).
 - o The park concerts are supported by sponsorship with Chestnut Square Apartments.
 - o We also had a face painter, balloon twisting clowns, and 2 food trucks on site.

- June 27th – Virtual Golf on Gay St. (in front of the post office)
 - o We hired Dryvebox (a golf simulation studio on wheels) and partnered with Golf Galaxy, Broad Run Golf Club, and Rapsodo to bring this event to West Chester.
 - o We had 80 golfers take the challenge of “closest to the pin: on two different holes.
 - o Our prize pool, supported by our partners, was worth just over \$3,000
 - o We had 15 golfers “Beat the Director” and were entered in our “Grand Prize” drawing.



- June 29th – Skate & Break on Gay St. (in front of SideBar Restaurant)
 - o Partnering with Skate ChesCo, the SideBar, Fairman’s Skate shop online, and Clyde Evans (Chosen Dance Company) we brought a new event to town.
 - o All participants (32 in total) had to sign a waiver (parents signed if participant was under 18) and then were allowed to skate on their own or get help from the Skate ChesCo group or folks could hula hoop with DJ Clyde Evans and just have fun.
 - o We plan to host another, similar event, in the future.



Upcoming Events

- July 17th Park Concert at Hoopes Park (make up from 29th rain out)
- Aug. 5th Night Out Against Crime/Touch A Truck at WC Henderson Campus 6-8pm
 - o Organized with WCPD as the lead
- Aug. 14th Theater in the park at MSP 6-8pm
- Aug. 15th Movie night at Hoopes Park
- Aug. 21st Park concert at John O Green Park 6-8pm
- Aug. 23rd Welcome Back Weekend with WCU
 - o We will be running our Mini Golf on Gay St.

Camps, classes, and bus trips

Ryan Michael, Program Coordinator, is continually working on our list of programming for Spring/Summer/Fall 2025.

June 2025 myrec.com report

Program Sales Report for 06/01/2025 - 06/30/2025

Program Name	Res Count	Non-Res Count	Total Count	Res Total	Non-Res Total	Totals
44th Annual Chester County Restaurant & Food Truck Festival Application	2	15	17	\$385.00	\$2,195.00	\$2,580.00
Brandywine School of Wizardry	0	1	1	\$0.00	\$437.50	\$437.50
Just Tennis with Justin DePietropaolo	3	16	19	\$335.00	\$1,360.00	\$1,695.00
Mini Golf on Gay Street	5	6	11	\$31.00	\$36.00	\$67.00
Pickleball - Univeral Rackets & Tyler Stroyek	0	2	2	\$0.00	\$420.00	\$420.00
Touch A Truck / Night Out Against Crime - Vehicle Sign Up	1	3	4	\$0.00	\$0.00	\$0.00
Yoga - Be Rooted	1	4	5	\$15.00	\$60.00	\$75.00
Yoga and Qigong by Optimal Massage and Movement	0	1	1	\$0.00	\$15.00	\$15.00
Totals	12	48	60	\$766.00	\$4,523.50	\$5,289.50

PROS Plan Steering Committee

- JMT/Toole Recreation Planning have completed the “draft” final of the PROS Plan to the Borough for review.
 - o The plan will be reviewed by the Steering Committee, with reports back to the Recreation Commission.
- We plan on having a reviewed plan in Aug./Sept. timeframe.



December 5, 2024

WCHBO00037P

West Chester Borough

Attn: Mr. Don Edwards
Director of Public Works
401 E. Gay Street
West Chester, PA 19380
DEdwards@west-chester.com

**RE: Proposal for Professional Services
Goose Creek Floodplain Study**

Dear Mr. Edwards:

Pennoni is please to present this proposal to West Chester Borough for professional services for a floodplain study along Goose Creek between Lacey Street and U.S. 202.

PROJECT UNDERSTANDING

The purpose of this study is to assess the existing floodplain along Goose Creek between Lacey Street and U.S. 202 and identify alternatives within the corridor to mitigate flooding within the Borough, specifically at the intersection of South Franklin Street and Linden Street.

SCOPE OF SERVICES

Pennoni will provide the following Scope of Services:

1. TOPOGRAPHIC SURVEY

Pennoni will perform a limited topographic survey and supplement with data previously collected by Pennoni in 2019, data provided by T&M Associates (T&M), and LiDAR.

T&M conducted a topographic survey between Greenfield Park and FEMA cross-section F to be used in their HECRAS model for the Conditional Letter of Map Revision (CLOMR) Case No. 22-03-0966R, which is shown in green on the attached exhibit. Pennoni previously conducted a topographic survey in 2019 as part of a Borough project analyzing the replacement of the South Franklin Street Bridge. This 2019 survey extends from 10 feet downstream of Nields Street to Greenfield Park and is shown in yellow on the attached exhibit. Therefore, topographic surveys have already been conducted from about Nields Street to FEMA cross-section F based on data available from T&M and Pennoni. The areas within the project scope that have not been surveyed include Lacey Street to Nields Street and FEMA cross-section F to U.S. 202. In the area between Lacey Street and Nields Street, there is one FEMA cross-section (cross-section H) and two bridges (Lacey Street and Nields Street). In the area between FEMA cross-section F and U.S. 202, there are no additional FEMA cross-sections.

Per the Borough's request, Pennoni will only perform a topographic survey of previously unsurveyed FEMA cross-sections and any bridge waterway openings. Therefore, Pennoni will perform topographic field survey of the Goose Creek FEMA cross-section H, the Lacey Street bridge, and the Nields Street bridge. The areas that are not topographically surveyed will be supplemented with LiDAR data. This includes the area between FEMA cross-section F and U.S. 202.

If the Borough wishes to pursue a specific alternative, Pennoni can provide a separate proposal for a detailed topographic survey of the alternative area to verify the HECRAS model.

2. EXISTING CONDITIONS H&H ANALYSIS

Pennoni will conduct one field visit to observe and photograph the existing conditions of Goose Creek's streambanks between Lacey Street and U.S. 202.

Following the field visit and the topographic survey, Pennoni will provide an email to the Borough comparing the FEMA cross-section H topography to the surveyed cross-section topography to identify if the cross-sections are consistent.

Pennoni will create a hydrologic and hydraulic (H&H) one-dimensional steady flow HECRAS model along Goose Creek between Lacey Street and U.S. 202. This model will utilize flow data inputted at up to three cross-sections along the model. Pennoni will compare flow data from the FEMA Flood Insurance Study (FIS) report, StreamStats' regression equations, and Technical Release 55 (TR-55). Pennoni will use engineering judgement to choose the most realistic flow data to utilize in the model to analyze the existing conditions along Goose Creek for the following storm events: 2-year design storm, 10-year design storm, 50-year design storm, 100-year design storm, and 500-year design storm.

T&M has analyzed between Greenfield Park and the FEMA cross-section F in their HECRAS model used for the aforementioned CLOMR to FEMA. Pennoni will create our own HECRAS model for the area between Lacey Street and Greenfield Park and the area between FEMA cross-section F and U.S. 202. This model will then be combined with T&M's HECRAS model to create a complete existing conditions H&H model along Goose Creek from Lacey Street and U.S. 202. This model will utilize the FEMA FIS elevations at U.S. 202 as a tailwater condition.

Pennoni will obtain the HEC-2 model from FEMA that was used to create the FIS report. We will compare the FEMA HEC-2 model with our existing conditions HECRAS model to determine any differences regarding stream bed, bridge openings, and floodplain extents.

Pennoni will prepare a letter report outlining and summarizing any differences between the FEMA HEC-2 model and our existing conditions HECRAS model. Pennoni will also provide a map exhibit that shows the topography, cross-section, and stream centerline used in the HECRAS model along with the FEMA floodplain extents as compared to the existing conditions HECRAS model floodplain extents.

3. ALTERNATIVES STUDY

Pennoni will analyze up to three alternatives to improve the Goose Creek streambank and to mitigate flooding at the intersection of South Franklin Street and Linden Street. These alternatives may include improvements located within West Goshen Township and/or the Borough. Each alternative will include a H&H HECRAS model to analyze the alternative's floodplain impact and potential flooding mitigation impact. These H&H models will analyze the proposed conditions along Goose Creek for each of the alternatives for the following storm events: 2-year design storm, 10-year design storm, 50-year design storm, 100-year design storm, and 500-year design storm.

Pennoni will prepare an alternatives study report with a description of the alternatives considered, recommendations, a budgetary opinion of probable cost for the recommended alternative, and an estimated schedule for the recommended alternative. The report will also include a map exhibit with the HECRAS model results for both the existing conditions and evaluated alternatives conditions. Additionally, Pennoni will prepare a one-page concept plan exhibit of the recommended alternative, which will include a conceptual re-grading plan and one proposed Goose Creek cross-section modification.

We will make one draft study report submission to the Borough for review and comments, one near-final report submission to the Borough for review and comments, and one final submission to the Borough.

The Scope of Services includes five virtual progress/review meetings with the Borough.

ASSUMPTIONS

- A topographic survey from Greenfield Park to FEMA cross-section F as indicated in the "Community Acknowledgement Letter" exhibits as part of the Conditional Letter of Map Revision (CLOMR) Case No. 22-03-0966R will be provided by T&M.
- T&M's topographic survey will be provided via an AutoCAD or MicroStation file and will have an AutoCAD or MicroStation surface TIN.
- T&M's topographic survey will use the NAVD88 datum and the PA South State Plane Coordinate System, NAD83 (2011) horizontal coordinate system.
- T&M will provide the complete HECRAS model used for the CLOMR Case No. 22-03-0966R.
- T&M's HECRAS model is accurate and does not require any modifications to the geometry data or flow data.

SCHEDULE

We propose to conduct the topographic survey approximately 3 weeks following the Notice to Proceed and provide a draft submission of the study report approximately 6 weeks thereafter. The schedule for near-final and final submissions will be dependent on the review timeframes and the extent of comments to be addressed between the draft submission and final submissions.

FEE

Pennoni will provide the above referenced Scope of Services on a Lump Sum basis for a fee of **Forty-Three Thousand Five Hundred dollars (\$43,500.00)**. A breakdown of fees follows:

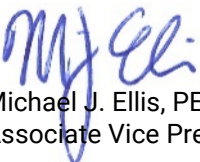
TASK	DESCRIPTION	FEE
1	Topographic Survey	\$5,500.00
2	Existing Conditions H&H Analysis	\$15,000.00
3	Alternatives Study	\$23,000.00
TOTAL		\$43,500.00

The proposed fee is valid for six months from the date of this proposal. Pennoni reserves the right to adjust the fee if Notice to Proceed is not issued within six months of the date of this proposal.

We have proposed a Scope of Services which satisfies our current understanding of the project. Should additional services be requested that are not included or listed in the above Scope of Services, such as but not limited to CLOMR to FEMA, design, permitting, or bid documents, we will provide a supplemental proposal.

If this proposal is acceptable, please execute by signing and returning a copy to this office to serve as our Notice to Proceed.

Sincerely,
PENNONI ASSOCIATES INC.



Michael J. Ellis, PE
Associate Vice President

ACCEPTED BY:

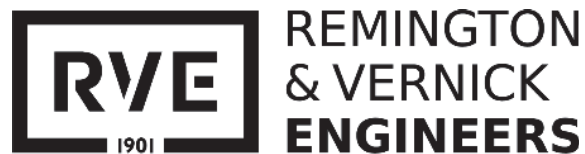
SIGNATURE: _____

WRITTEN NAME: _____

DATE:



Goose Creek Flood Mitigation Study
Borough of West Chester, Pennsylvania



Croton Road Corporate Center
555 Croton Road, Suite 401
King of Prussia, PA 19406

610-940-1050
rve.com

June 27, 2025

Donald Edwards
Public Works Director
West Chester Borough
401 East Gay Street
West Chester, Pennsylvania 19380

RE: RFP for Goose Creek Flood Mitigation Study

Dear Mr. Edwards:

Remington & Vernick Engineers (RVE) is pleased to submit this proposal to provide engineering services to West Chester Borough (Borough) for the Goose Creek Flood Mitigation Study. Our response is prepared understanding and in coordination with the elements of the RFP, sent to RVE on June 5, 2025.

RVE has had the privilege of providing both general engineering and MS4 services to the Borough for the past two years. In this time, RVE has deepened its understanding of the Borough's community and infrastructure, and we have become a trusted partner in helping the Borough deliver exceptional services to its nearly 20,000 residents. Over the years, we have gained valuable experience working with the Borough on stormwater reviews and inspections, acquiring a sediment removal permit for Goose Creek, lining project for the flood mitigation program and developing the addenda for the Pollution Reduction Plan and the Total Maximum Daily Load Plan. We will use the knowledge gathered through these projects to develop solutions that are both effective and sensitive to the Borough's specific needs.

It is our understanding that flooding is common on the Borough's east side during small storm events, leading to street closures in extreme cases. We understand these events have been a problem for years and are both inconvenient and frustrating for Borough residents. RVE is prepared to investigate available data from FEMA and other resources to identify three potential solutions that would significantly mitigate this flooding issue. RVE will identify options that do not involve modification or replacement of culverts, per the Borough's request.

Our team of dedicated professionals that will work on this study brings with them ample experience with similar projects. **Christopher Fazio, PE, Executive Vice President**, will serve as Principal in Charge of this study. Mr. Fazio has overseen all projects conducted for West Chester Borough, as well as drainage and stormwater management studies throughout Pennsylvania. **Steven Bolt, PE, PTOE**, will manage QA/QC. He has worked on stormwater management projects throughout his more than three decades of engineering experience. **Stuart Gause, PE, CPESC**, will serve as the Project Manager. Mr. Gause has over three decades of experience in stormwater infrastructure, hydraulic and hydrologic studies and using HEC-RAS software. **Kelly Goff, PE, CFM**, will serve as a Client Liaison, having direct experience working with the Borough as Stormwater Engineer. Project experience of all our key team members can be found in [Section 2](#).

We look forward to the opportunity to further serve and aid West Chester Borough through working on this study. Should you have any questions or require further information, please contact Mr. Fazio at 610-940-1050 or via email at Christopher.Fazio@rve.com.

Sincerely,
REMINGTON & VERNICK ENGINEERS



By

Leonard A. Faiola, PE, PP, CME
President & CEO

Table of Contents

SECTION	PAGE
1 Scope of Services and Project Schedule.....	5
2 Relevant Qualifications.....	10

Scope of Services and Project Schedule

Section 1

Remington & Vernick Engineers (RVE) is pleased to provide the Borough of West Chester (Borough) with our proposal to provide engineering services related to the Goose Creek Flood Mitigation Study, including analysis of Goose Creek from Lacey Street to the West Chester Bypass (Route 202). The scope of services to be provided by RVE and the associated costs are detailed herein.

Scope of Work

The proposed study area includes Goose Creek from Lacey Street to the West Chester Bypass (Route 202). RVE understands that the goal of this project is to provide cost-effective recommendations to mitigate the current flooding concerns. Specifically, the Borough is seeking three cost-effective options to improve the Goose Creek streambank and mitigate flooding on South Franklin Street near Linden Street.

The area of study is shown on the FEMA Flood Insurance Rate Map (FIRM #42029C0210G), revised September 29, 2017, and coincides with the area shown as an impeded backwater behind the Access Road Bridge on the Goose Creek profile in the FEMA Flood Insurance Study (FIS #42029CV004B). The FIS also includes a description of known flooding problems along Goose Creek within the Borough.

RVE's team of professionals includes licensed professional engineers, land surveyors and support staff necessary to complete the project. Of specific relevance to this project, our team includes professional engineers with significant years of experience working on contracts with FEMA to review similar flood mapping, including CLOMRs, LOMRs and LOMAs, etc. Our engineering staff is fully trained in the engineering disciplines and has all the skills necessary to complete this project.

A detailed description of the phases and work proposed are described as follows:

Phase 1 – Obtain Data

State PASDA GIS LiDAR terrain and topographic data will be obtained for the project area. Additionally, RVE will use GIS topographic data, along with data shared by T&M Associates related to a proposed hotel project at 205 Carter Drive, to develop a model for the project. Using the project topographic model, FEMA cross sections can be located and hydraulic sections determined for the HEC-RAS model. FEMA and State LiDAR data are widely accepted by regulatory agencies and provide comprehensive terrain coverage across the study area.

According to the FEMA Flood Insurance Study, the existing Goose Creek hydraulic model is a 1977 HEC-2 model. The FEMA flood model and associated mapping will be requested from FEMA along with HEC-RAS models and mapping for Letters of Map Revision, if available.

With the knowledge that the FEMA mapping is based on a HEC-2 model and the mapping used with the HEC-2 model is most likely not available, cross sections will be located approximately based on FEMA floodway data sections shown on the Flood Insurance Rate Map and by measurements from relevant landmarks such as bridges.

A site visit to review the Goose Creek channel and floodplain will be conducted to verify the reach area and floodplain characteristics. It is assumed that West Chester Borough personnel will assist with access to properties along Goose Creek. Additionally, up to one day of field topographic survey work using the Global Navigation Satellite System (GNSS) will be performed to collect data along pre-selected high priority cross sections. RVE recommends that extensive detailed topographic surveying take place in a future and separate design development phase.

A letter report summarizing the findings of the FEMA model and data, the LiDAR mapping and model for 205 Carter Drive and site visit data will be submitted to the Borough.

Phase 2 – Analysis

The HEC-2 and other models will be converted to HEC-RAS and serve as the base model for the study area. Data, mapping, and modelling for 205 Carter Drive, provided by T&M Associates, will also be integrated into the HEC-RAS model. Bridges and culverts, which are modelled differently in HEC-2 and HEC-RAS, will be converted according to FEMA and US Army Corps of Engineers guidelines.

The existing and proposed alternatives HEC-RAS models will be run for the 2-, 10-, 25-, 50-, 100-, and 500-year storms and the FEMA floodway. Beginning conditions will be set to run from the Goose Creek reach descending to Route 202 so that a downstream tie-in is made to the FEMA model. An existing conditions HEC-RAS model for the Goose Creek Reach between the FEMA located Access Road Bridge and East Nields Street will be built using the PASDA LiDAR and supplemented on the upstream and downstream ends with the HEC-2 to the HEC-RAS base model. Cross sections from the HEC-2 to HEC-RAS base model will be fitted to the existing HEC-RAS terrain model.

Three alternatives to increase conveyance and lower flood elevations will be proposed, modelled and compared to the existing model and to FEMA published data. To minimize the costs of the alternatives, bridges and culvert modifications/replacements will not be included as improvements. An order of magnitude cost estimate and a proposed schedule for the studied alternatives will be prepared and be used to compare the three alternatives.

Additional database checks will be made for threatened and endangered species, regulated substances, cultural and historic locations and wetlands for alternatives assessment.

A draft report will be prepared presenting the existing and proposed alternatives hydraulic modelling results, HEC-RAS model mapping for each alternative including cross sections, descriptions of proposed alternatives improvements, order of magnitude cost estimates, implementation schedules and items used for the alternatives' analyses. The report will be submitted for review.

Phase 3 – Final Report

A report will be prepared and submitted to the Borough Staff for review. The following will be included in the report:

1. A plan with cross sections of Goose Creek that shows existing and proposed alternative conditions.
2. Project cost estimates for the proposed alternative improvements.
3. Proposed schedule to complete improvements for the proposed alternatives.
4. Proposed grant opportunities to fund the improvements.

RVE is assuming five meetings with the Borough during the project, to be held on Microsoft Teams.

Project Schedule

Upon authorization from the Borough, we will begin work immediately. An approximate project schedule in accordance with the phases detailed in the scope of work is listed below.

Phase 1, Obtain Data – 4 months

Phase 2, Analyses – 3 months

Phase 3, Final Report – 2 months

Total Approximate Project Duration – 9 months

QA/QC Process

RVE is committed to providing our clients with high quality services. The firm's QA/QC Program relies on the commitment of our project staff. It starts with the careful selection of the Project Manager and staff suited to the particular needs of the project and culminates with a comprehensive quality review prior to final execution of the project.

The firm has a QA/QC Plan on file and in the possession of every employee. Project-specific plans are created and implemented as required by each client. The firm's QA/QC Committee meets once a month to track QA/QC issues and revise policy as necessary due to legislation, experiences or other circumstances.

The firm provides superior technical quality in municipal project planning, design engineering and construction management/inspections. Over our years in business, the firm has developed comprehensive procedures for quality management and control. These include procedures for scheduling and assigning work; recording, retention and retrieval of records of both design and construction activities; identifying and resolving deficiencies effecting the work and verifying compliance with the requirements of the QA/QC Program. Our QA/QC approach consists of the following:

- Assignment of technically qualified personnel to the project.
- Communication of project requirements to the staff and confirmation that communication occurs via direct participation of project management personnel responsible.
- In-progress reviews of all work being performed.
- Independent technical review of project deliverables prior to submittal to the client.

Conditions and Exclusions

The fees quoted herein are inclusive of the work necessary to produce the required deliverables. The fees are subject to the following conditions and exclusions:

1. This proposal is based on the scope as known at this time. If unforeseen conditions and/or unanticipated work items arise, our office shall provide a separate or amended scope of services and cost proposal for consideration and approval.
2. This proposal does not include the engineering design services or permitting proposed alternatives. The estimated costs provided for each of the proposed alternatives will include budgetary costs for the fees associated with engineering design and permitting.
3. This proposal does not include the acquisition of right-of-way, easements, takings or subdivision plans.
4. There will be no revisions to existing bridges, culverts or dams present on Goose Creek accounted for in the analyses. Database checks, but no investigations or regulatory determinations, will be made for (continued on the following page):
 - a. Threatened or Endangered Species
 - b. Regulated Substances, Contamination and Hazardous Wastes
 - c. Existing Environmental Assessments and Plans
 - d. Archeological, Cultural and Historic Properties and Districts
 - e. Wetlands
5. Pennsylvania Department of Environmental Protection, Federal Emergency Management Agency and other local, state and federal permits are not included.
6. West Chester Borough personnel will assist with access to Goose Creek and the lands along Goose Creek and will issue Intent to Enter (ITE) letters.
7. Fees associated with obtaining FEMA flood models are excluded from our cost of services.
8. By using the PASDA LiDAR data, new construction might not be captured on the topographic mapping.
9. Topographic field surveys beyond one day of field work, LiDAR surveys or boundary surveys are not included.
10. Coordination with neighboring municipalities will not be performed.

Cost of Services

RVE’s total Not to Exceed fee for providing the professional engineering services described above in Phase Nos. 1 – 3 is **\$38,500.00**, inclusive of reimbursable expenses, which will be billed on a time and materials basis. The total Not to Exceed fee will not be adjusted without the prior approval of the Borough for the additional costs associated with a specific change in the scope of work.

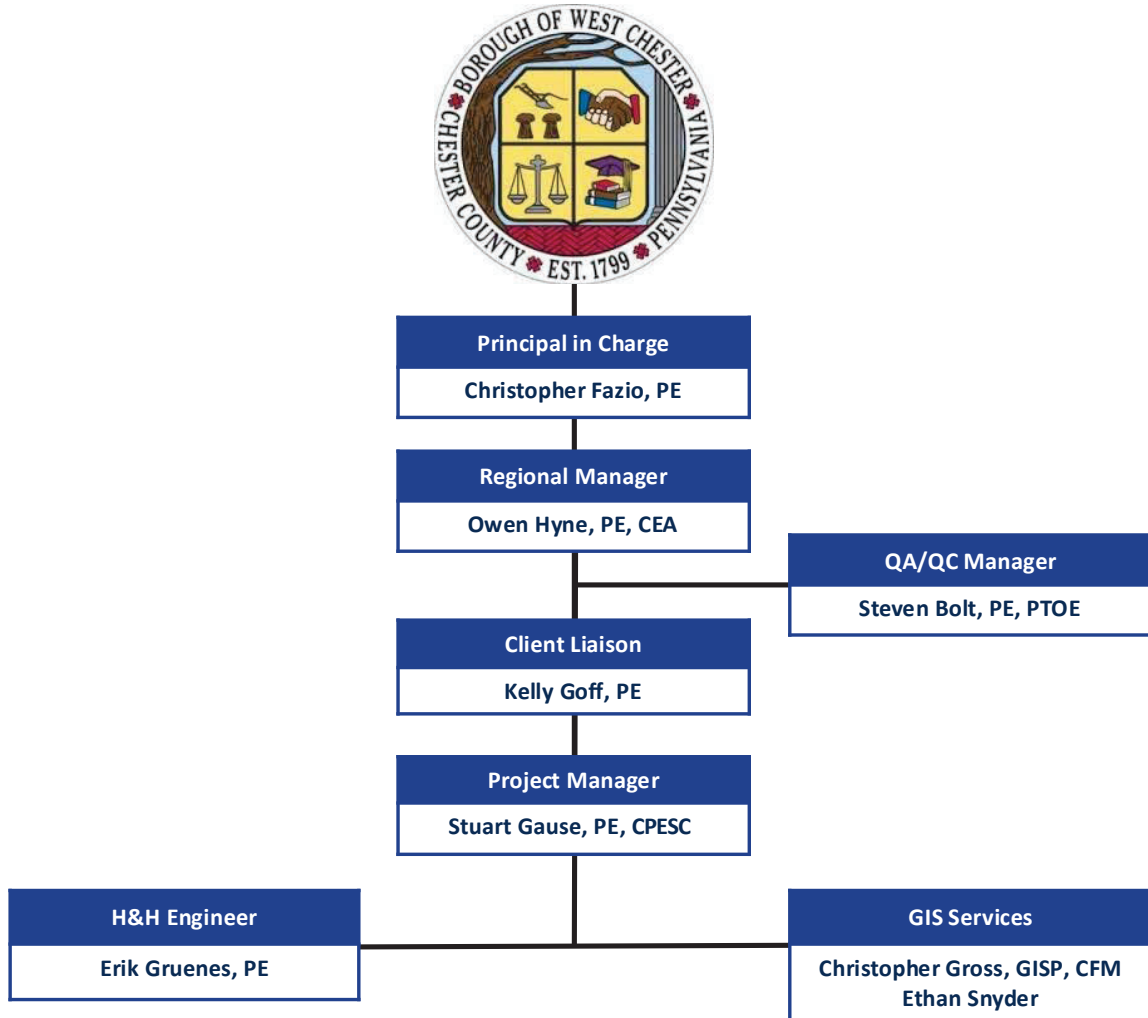
#	Phase	Fee
1	Obtain Data	\$7,200.00
2	Analysis	\$23,300.00
3	Final Report	\$8,000.00
	Total Not to Exceed Fee:	\$38,500.00

We trust the information provided meets your requirements for this project. RVE will proceed with the work described above upon receipt of your written authorization to proceed.

Relevant Qualifications

Section 2

Below is an organizational chart of key team members for this project. Resumes and licenses for these team members and detailed profiles of the firm’s relevant project experience can be found on the following pages.



Key Personnel Resumes and Licenses

Christopher Fazio, PE, CME

Principal in Charge

Executive Vice President

Overview

- More than two decades of experience in civil/municipal engineering
- Areas of expertise include sanitary and storm sewer design, hydraulics and hydrology, highway and roadway design, subdivisions and site plan design, sewerage and water systems, municipal ordinance/code preparation and technical studies and reports

Work History

RVE experience: 1995 to present

Total experience: 29 years

Education

B.S., Civil Engineering, Lehigh University, 1995

Certifications/Registrations

Professional Engineer – DC, DE, MD, NJ, PA, NC

Certified Municipal Engineer – NJ

OSHA 40 Hours Hazmat Certified

Representative Project Experience

Flood Mitigation Program – Lining Project, West Chester Borough, PA – Principal in Charge responsible for expand-in-place manhole to manhole lining of selected storm sewers in the Borough of West Chester. This work includes a post installation televised inspection of the storm infrastructure connections. All storm infrastructure connected to the main infrastructure is to be inspected from the storm main infrastructure for 15'. Phase 1 work is to be conducted as South High Street at 30" in diameter. Phase 2 work is to be conducted at East Miner Street at 30" in diameter, West Union Street at 36"x24", Wollerton Alley at 30" and North Wanye Street at 36". Phase 3 work is to be conducted at East Miner Street at 30" in diameter, South High Street at 36", West Union Street at 36"x24", South New Street at 36"x24", Wollerton Alley at 30", West Market Street at 24", North Wayne Street at 24", Pine Alley at 36", East Chestnut Street (from North High Street to Law A1) at 24" and East Chestnut Street (from Law A1 to North Walnut Street) at 30".

2025 MS4 Services, West Chester Borough, PA – Principal in Charge responsible for MS4 services for West Chester Borough. Outreach services include filling out the Public Education Plan worksheet for PADEP submission, distributing stormwater brochures to businesses residents and schools, taking out an advertisement in the local newspaper and presenting components of the MS4 and Illicit Discharge Detection & Elimination Program at a public meeting. RVE is performing visual screenings of the stormwater outfall, conducting tests of selected pollutants, assisting the Borough in locating source of discharge if dry weather flow is beyond PADEP limits, taking appropriate action to correct discharges and documenting outfall screening activities using PADEP procedures. RVE is responsible for construction stormwater runoff management, post-construction stormwater runoff management and pollution prevention.

Whites Road Park Streambank Stabilization and Restoration, Lansdale Borough, PA – Principal in Charge responsible for the Whites Road Streambank Stabilization Phases I, II, III and IV in Lansdale, PA. The Borough needed to address ongoing concerns of streambank erosion, beautify the park, and meet the goals of the Borough's TMDL requirement for Skippack Creek. RVE reviewed the TMDL Plan for Skippack Creek and assessed the required pollutant load reduction required to meet the TMDL plan. The analysis included a determination of the drainage areas land cover contributing runoff to the stream, a review of the Borough's outfalls that contribute to the stream, an analysis of areas that could be removed from the drainage area as they do not contribute to the Borough's MS4 system, and a determination of the expected flow to the stream in larger event storms. RVE performed a site assessment of the park and existing streambanks to determine the best measures to be used. RVE provided a presentation and a concept plan exhibit which shows the streambank stabilization measures and proposed landscaping in relationship to the surrounding park for the public to view and comment prior to proceeding with a detailed design at a Borough Public Meeting. Based on comments received from Borough Staff and residents, RVE completed a design of the streambank stabilization and buffer reforestation areas within the park.

Phoenixville Drainage Study, Phoenixville Borough, PA – Principal in Charge responsible for a drainage study to address stormwater flooding issues in four locations within the Borough. The primary goal of the study was to develop recommendations for mitigating flooding issues. RVE performed Hydrology and Hydraulic (H&H) modeling to calculate the stormwater flows within the watershed of each flooding area and to determine the capacity of the existing storm sewers. The H&H modeling enabled RVE to model the potential benefit of different mitigation measures such as installing additional storm sewers and inlets, improving the capacity of existing storm sewers, or the construction of new or enlarged detention basins. The report included recommendations on the location of new storm sewer and inlets, the length/size of storm sewer replacement, and detention basin sizing, as well as implementation guidance on property ownership, budgetary project costs, anticipated permitting, and estimated project timelines. Phase I services included attending meetings with Borough Staff to review the project goals and available storm sewer mapping, reviewing available records, and performing field data collection for the Borough's storm sewer system within each of the watershed areas and downstream to the outfall or Borough boundary. RVE provided a detailed report presenting the results of the watershed study in each area along with recommendations for mitigating the flooding issues.



BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

10/03/2023

License Information

CHRISTOPHER JOSEPH FAZIO

West Chester, Pennsylvania 19382

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	05/14/2001
LicenseType:	Professional Engineer	Issue Date:	02/08/2000
Specialty Type:		Expiration Date:	09/30/2025
License Number:	PE055338E	Last Renewal:	08/09/2023
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

Owen Hyne, PE, CEA

Regional Manager

Senior Associate

Overview

- Professional Engineer and Project Manager for public building construction and renovations, educational facilities, land development, parks and recreation, streetscapes, roadway resurfacing and reconstruction, ADA improvements, utility infrastructure, water/wastewater treatment plant upgrades, renewable energy projects and environmental permitting
- Serves as Account Representative for public and private sector clients, including as Engineer of Record (EOR) responsible for review and oversight of Subdivision and Land Development applications and Stormwater Management Plans
- Department Head for Municipal Services responsible for ensuring that projects are designed and constructed to meet client objectives and in accordance with all Federal, State and local regulations
- Certified Energy Auditor with expertise conducting Energy Audits and recommending Energy Conservation Measures

Work History

RVE experience: 2007 to present

Total experience: 17 years

Education

B.S., Civil Engineering, Drexel University, 2007

B.S., Architectural Engineering – Mechanical Concentration, Drexel University, 2007

Certifications/Registrations

Professional Engineer – PA, DE

Certified Energy Auditor – Association of Energy Engineers (AEE)

Confined Space Training

Representative Project Experience

Whites Road Park Streambank Stabilization and Restoration, Lansdale Borough, PA – Engineering Department Head responsible for the Whites Road Streambank Stabilization Phases I, II, III and IV in Lansdale, PA. The Borough needed to address ongoing concerns of streambank erosion, beautify the park, and meet the goals of the Borough's TMDL requirement for Skippack Creek. RVE reviewed the TMDL Plan for Skippack Creek and assessed the required pollutant load reduction required to meet the TMDL plan. The analysis included a determination of the drainage areas land cover contributing runoff to the stream, a review of the Borough's outfalls that contribute to the stream, an analysis of areas that could be removed from the drainage area as they do not contribute to the Borough's MS4 system, and a determination of the expected flow to the stream in larger event storms. RVE performed a site assessment of the park and existing streambanks to determine the best measures to be used. RVE provided a presentation and a concept plan exhibit which shows the streambank stabilization measures and proposed landscaping in relationship to the surrounding park for the public to view and comment prior to proceeding with a detailed design at a Borough Public Meeting. Based on comments received from Borough Staff and residents, RVE completed a design of the streambank stabilization and buffer reforestation areas within the park.

Lansdale Cemetery Stormwater Management Study, Lansdale Borough, PA – Engineering Department Head responsible for a stormwater management investigative study to mitigate stormwater flooding at the White Roads Park. RVE was retained by the Borough to perform stormwater and H&H analyses to determine causes of flooding and provide mitigating solutions. RVE generated a report of the alternatives analysis, which included construction costs, a cost/benefit analysis, required permitting and timeframes for construction of each alternative solution.

Phoenixville Drainage Study, Phoenixville Borough, PA – Project Manager responsible for a drainage study to address stormwater flooding issues in four locations within the Borough. The primary goal of the study was to develop recommendations for mitigating flooding issues. RVE performed Hydrology and Hydraulic (H&H) modeling to calculate the stormwater flows within the watershed of each flooding area and to determine the capacity of the existing storm sewers. The H&H modeling enabled RVE to model the potential benefit of different mitigation measures such as installing additional storm sewers and inlets, improving the capacity of existing storm sewers, or the construction of new or enlarged detention basins. The report included recommendations on the location of new storm sewer and inlets, the length/size of storm sewer replacement, and detention basin sizing, as well as implementation guidance on property ownership, budgetary project costs, anticipated permitting, and estimated project timelines. Phase I services included attending meetings with Borough Staff to review the project goals and available storm sewer mapping, reviewing available records, and performing field data collection for the Borough's storm sewer system within each of the watershed areas and downstream to the outfall or Borough boundary. RVE provided a detailed report presenting the results of the watershed study in each area along with recommendations for mitigating the flooding issues.

Walnut Street Storm Sewer Arch Repair, Pottstown Borough, PA – Project Manager responsible for the engineering services for the repair of a collapsed segment of storm sewer arch at 42 Walnut Street in Pottstown, PA. In conjunction with assisting the Borough with obtaining grant funding for repairs at 42 Walnut Street, This new culvert can be fabricated to match the dimensions of the existing storm sewer arch and support backfill and surface loading. The design of the aluminum box culvert included appropriate footers and transitions to existing upstream and downstream segments. RVE determined the necessary limitations on future use of the area above the storm sewer, including restrictions from building new structures. Upon completion of the project, the area was restored as an off-street parking area. RVE provided legal descriptions and exhibits to establish permanent drainage easements or covenants to prohibit future construction over top of the storm sewer arch. In addition, temporary construction easements were necessary to conduct the project work.



BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

10/03/2023

License Information

OWEN MARSHALL HYNE

Schwenksville, Pennsylvania 19473

Board/Commission: State Registration Board for Professional
Engineers, Land Surveyors and Geologists

Status Effective Date: 11/13/2012

LicenseType: Professional Engineer

Issue Date: 11/13/2012

Specialty Type:

Expiration Date: 09/30/2025

License Number: PE080447

Last Renewal: 08/01/2023

Status: Active

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the
Pennsylvania Department of State.

Steven Bolt, PE, P. OE

A/ C Manager

Overview

- More than three decades of engineering and planning experience
- Areas of expertise include major highway design projects, environmental impact statements and assessments, route location design, studies, traffic signal system design, construction management, highway safety improvement programs, stormwater management and traffic operation studies

Work History

RVE experience: 2020 to present

Total experience: 7 years

Education

B.S., Civil Engineering, Villanova University, 1

Certifications/Registrations

Professional Engineer – PA, FL, DE, MD, , V

Professional Traffic Operations Engineer (PTOE)

Representative Project Experience

Sumneytown Pike Bridge Replacement Project, pper wynedd ownship, PA A/ C Manager responsible for the construction of a new bridge to replace the existing failing one located on orth Sumneytown Pike between West Point Pike and Dickerson Drive. The Sumneytown Pike Bridge over Wissahickon Creek is a single-span, concrete encased steel I-beam bridge on reinforced concrete abutments. Recent inspections have indicated significant deterioration of the bridge superstructure and substructure. The project includes replacing the bridge while bringing the roadway up to the latest PennDOT standards, including room for a future shoulder that could also be used someday for an on-road bicycle lane. The scope of services includes surveying, preliminary design, permitting, project management, coordination of constructability reviews, archaeology and cultural surveys, preliminary drainage and stormwater management design, cross-sections, line and grade development, design field view, right-of-way planning, hydrology and hydraulic report, traffic safety and control, subsurface utility services and final design including structure foundation reports, drainage, roadway, cross-sections, final right-of-way, structure plans, traffic control and signing plans, environmental and erosion control plans, public involvement and bidding assistance, as well as construction management and inspection.

Bridge o Replacement, County of Bucks, PA – Project Manager responsible for managing the full replacement of Bucks County Bridge o. and associated roadway items including guiderail and approach pavement on Mill Pond Road over Swamp Creek in Milford Township, PA. Tasks included environmental studies, permitting, preliminary engineering, final design and construction consultation. The design scope included performing utility clearance investigations, survey/base mapping, geotechnical investigation, cultural resources, hydraulic/hydraulic analysis, erosion/sediment plans, ROW plans, roadway/structural design calculations, preparing plans and specs, preparing construction schedule, prepare detour plan, attend progress meetings and pre-bid conference, preparing bid documents and attending bid opening. Construction phase consultation services include attending construction meetings, reviewing project submittals and shop drawings, aiding/responding to RFI s and performing site visits when necessary.

Hydraulic and Hydrologic Studies Related to the Proposed EW Arterial Expansion Project, ational Roads Authority RA , rand Cayman, Caymans islands – Project Director responsible for the study of H&H associated with the proposed 10-mile segment of the EW Arterial on rand Cayman Island. Services include compiling rainfall data, conducting statistical analysis, assessing water quality and determining design parameters using specialized software. The project encompasses analyzing conveyances, watershed hydrology, topographic mapping and considering factors like soils, geology, future land use, tidal data and groundwater recharge, with RVE utilizing various tools and methods such as HEC-RAS software and the rational method. Additionally, RVE is tasked with project management, scenario modeling, including sea-level rise impacts and preparing a comprehensive summary report of analysis findings.

PennDO Bureau of Design, E , Open End for arious Engineering Services, Statewide, PA – Project Manager/Engineer of Record responsible for managing project resources, including subconsultant, to achieve Central office project initiatives. Work included highway occupancy permit and TIS policy and training smart transportation training drainage and safety support, highway lighting (staff augmentation) construction and materials assistance (staff augmentation) pavement and design support TIS reviews and eystone Corridor Initiatives and 0th Street Station Bicycle Initiative for the Bureau Public Transportation. *Outside of RVE*

PennDO District , SR , Section C , Blair and Centre Counties, PA A/ C Officer – A/ C Officer responsible for reviewing the final design for nine miles of limited access interstate alignment between Bald Eagle and Port Matilda including horizontal and vertical geometry, drainage design, four mainline bridges, erosion and sediment control plans, and final PS&E Documents. *Outside of RVE*



BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

10/03/2024

License Information

STEVEN B BOLT

CHESTER SPRINGS, Pennsylvania 19425

Board/Commission: State Registration Board for Professional
Engineers, Land Surveyors and Geologists

Status Effective Date:

LicenseType: Professional Engineer

Issue Date: 10/07/1988

Specialty Type:

Expiration Date: 09/30/2025

License Number: PE038208R

Last Renewal: 07/31/2023

Status: Active

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the
Pennsylvania Department of State.

elly off, PE, C M

Client Liaison

Associate

Overview

- A decade of experience in municipal engineering in support of MS4 services, stormwater infrastructure projects, MS4 Program compliance and roadway rehabilitation projects
- Areas of expertise include municipal engineering services and grant acquisition services
- Supported the evaluation, design, testing and construction of buildings, bridges, marine structures and infrastructure
- Experienced grant administrator with more than 27 million in funding secured for clients

Work History

RVE experience: 201 to present

Total experience: 1 years

Education

M.S., Civil Engineering, Villanova University, 201

B.S., Civil Engineering, Lehigh University, 200

Certifications/Registrations

Professional Engineer – PA

Certified Floodplain Manager (CFM)

Representative Project Experience

Flood Mitigation Program – Lining Project, West Chester Borough, PA – Stormwater Engineer responsible for expand-in-place manhole to manhole lining of selected storm sewers in the Borough of West Chester. This work includes a post installation televised inspection of the storm infrastructure connections. All storm infrastructure connected to the main infrastructure is to be inspected from the storm main infrastructure for 1 . Phase 1 work is to be conducted as South High Street at 0 in diameter. Phase 2 work is to be conducted at East Miner Street at 0 in diameter, West Union Street at x24 , Wollerton Alley at 0 and orth Wanye Street at . Phase work is to be conducted at East Miner Street at 0 in diameter, South High Street at , West Union Street at 24 , South ew Street at x24 , Wollerton Alley at 0 , West Market Street at 24 , orth Wayne Street at 24 , Pine Alley at , East Chestnut Street (from orth High Street to Law A1) at 24 and East Chestnut Street (from Law A1 to orth Walnut Street) at 0 .

MS Services, West Chester Borough, PA – Stormwater Engineer responsible for MS4 services for West Chester Borough. RVE developed addenda for the pollution reduction plan and total maximum daily load plan. RVE has served as the liaison between the Borough and the PADEP in order to determine the actions necessary to meet permitting requirements. RVE is performing visual screenings of the stormwater outfall, conducting tests of selected pollutants, assisting the Borough in locating source of discharge if dry weather flow is beyond PADEP limits, taking appropriate action to correct discharges and documenting outfall screening activities using PADEP procedures.

Haines Run Streambank Restoration, pper wynedd ownship, PA – Stormwater Engineer for this project. The Wissahickon Creek breached the Haines Run streambanks behind the Upper wynedd Wastewater Treatment Facility. This caused flooding at several buildings located at the facility as well as damages to wastewater treatment equipment. RVE provided engineering services associated with design improvements for Haines Run in the area alongside with Wastewater Treatment Facility, improved flood protection for the facility, identified and pursued grant funding, and incorporated this project into MS4 credits and annual program goals. RVE completed berm and streambank improvements near gate access at the Wastewater Treatment Facility, which significantly improved protection of the plant from rising water levels at this location. Further work is being designed for upstream controls for long-term flood mitigation.

grant Services, pper wynedd ownship, PA – rant Administrator responsible for obtaining more than 1.7 million in grant funding through various programs on behalf of Upper wynedd Township, PA. rants obtained were used to fund the Haines Run Streambank restoration - Phase I (Montco 2040 rant) Haines Run Hydrologic and Hydraulic Study (DC R Park and Conservation Fund) Haines Run Hydrologic and Hydraulic Study and Flood Mitigation Illuminated Traffic and Pedestrian Signage (Montco 2040 Implementation) and the reconstruction of the Sumneytown Pike Bridge (PennDOT MultiModal Transportation Fund).

grant Services, Pottstown Borough, PA – rant Administrator responsible for obtaining more than 1.4 million in grant funding through various programs on behalf of the Borough of Pottstown, PA. rants obtained were used to fund the sidewalk replacement and tree protection project (Montco 2040 Implementation) stormwter arch rehabilitation at high priority locations (PA H20) stormwater arch rehabilitation at 1200 High Street (DCED Flood Mitigation) Chestnut Street and South Street Park redevelopment project (DCED reenways, Trails and Recreation) and the rehabilitation and further development of Chestnut Street Park and South Street Park (DC R Community Conservation Partnerships Program).



BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

10/03/2023

License Information

KELLY ANNE GOFF

Aston, Pennsylvania 19014

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	06/12/2014
LicenseType:	Professional Engineer	Issue Date:	06/12/2014
Specialty Type:		Expiration Date:	09/30/2025
License Number:	PE082400	Last Renewal:	08/28/2023
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.

**ASSOCIATION OF STATE
FLOODPLAIN MANAGERS, INC.
CERTIFICATION BOARD OF REGENTS**

HEREBY CERTIFIES THAT PURSUANT TO THE PROVISIONS OF THE CHARTER FOR THE
CERTIFIED FLOODPLAIN MANAGER PROGRAM

Kelly A. Goff, CFM

IS DULY REGISTERED AS AN

ASFPM CERTIFIED FLOODPLAIN MANAGER

IN TESTIMONY WHEREOF THIS CERTIFICATE HAS BEEN ISSUED BY THE AUTHORITY OF THE
CERTIFICATION BOARD OF REGENTS, CERTIFICATE NO. US-18-10295, ISSUED 3/29/2018. THIS
CERTIFICATE SHALL EXPIRE 7/31/2022, UNLESS RENEWED ACCORDING TO THE RULES OF THIS BOARD.

Louis T. Greenwell

CERTIFICATION BOARD OF REGENTS
PRESIDENT, LOUIS T. GREENWELL, GISP, CFM

Chad M. Berginnis

ASSOCIATION OF STATE FLOODPLAIN MANAGERS
EXECUTIVE DIRECTOR, CHAD M. BERGINNIS, CFM



Stuart A. Cause, PE, CPESC

Project Manager

Overview

- Over 30 years of civil engineering experience
- Experience with highway design, site development, stormwater management, and floodplain modeling and mapping projects
- Duties include the development of highway design plans and specifications along with post construction stormwater management, erosion and sediment control plans, and flood studies
- Experience with floodplain hydrologic and hydraulic modeling mapping nationwide for the Federal Emergency Management Agency

Work History

RVE experience: 2020 to present

Total experience: 32 years

Education

B.S., Civil Engineering, Bucknell University, 1990

Certifications/Registrations

Professional Engineer – PA, MD, VA
Certified Professional in Erosion and Sediment Control

Representative Project Experience

Hydraulic and Hydrologic Studies Related to the Proposed EW Arterial Expansion Project, National Roads Authority (RA), Grand Cayman, Cayman Islands – Lead H&H Engineer for the pre-project hydraulic and hydrologic studies for the East-West Arterial Project in Grand Cayman, analyzing existing conditions, rainfall patterns and drainage flows to support both the Environmental Impact Assessment (EIA) and highway design phases. Services include compiling rainfall data, conducting statistical analysis, assessing water quality and determining design parameters using specialized software. The project encompasses analyzing conveyances, watershed hydrology, topographic mapping and considering factors like soils, geology, future land use, tidal data and groundwater recharge, with RVE utilizing various tools and methods such as HEC-RAS software and the rational method. Additionally, RVE is tasked with project management, scenario modeling, including sea-level rise impacts and preparing a comprehensive summary report of analysis findings.

Construction of a Roundabout at College Drive (CR 712) and Alumni Drive, County of Gloucester, VA – Stormwater Engineer responsible for the construction of a roundabout at CR 712 and Alumni Drive in the Township of Deptford, VA. This newer intersection of Alumni Drive was recently created through rerouting CR 712 away from the front of the Rowan College of Gloucester County campus to eliminate multiple pedestrian crossings for enhanced safety. The intersection could not be negotiated by the existing buses, including the Transit line servicing the college without encroaching into the opposing lanes for inbound movements. The project included the construction of a roundabout at the newly realigned CR 712/Alumni Drive intersection. The College currently has access through CR 712 via a signalized intersection with Blackwood-Barnsboro Road (CR 100) and unsignalized access along Tanyard Road (CR 100). The College has grown and expanded to recently double its enrollment and increased the facilities to now include a planned School of Nursing on the campus. As such, traffic has increased (pre-pandemic) and the ability for students to access the campus has strained the current adjoining intersections to create long delays for students.

SR 100, Section 100 Green Spring Road Bridges Replacement Project, Cumberland County, PA, PennDOT District 10 – Performed hydrologic calculations and HEC-RAS hydraulic modeling for the replacement of two bridges, Green Spring Road over Green Spring Creek and Green Spring Road over the Bulls Head Branch. The bridges were modeled together with the Bulls Head Branch Bridge as the primary bridge and the Green Spring Creek Bridge as a relief bridge because the crossings are in the confluence of the two streams. Outside of RVE

SR 100, Section B High Speed Interchange between Route 100 and Route 100, Centre County, PA, PennDOT District 10 – HEC-RAS Flood modelling of Pittany Creek through the interchange including an existing culvert and proposed culverts on Pittany Creek, proposed culverts on a tributary, and another proposed culvert on a second tributary along with grading and walls along the creeks. Additionally designed stormwater management for the interchange. Outside of RVE

SR 100, Section 100 Markley Street Improvement Project, Montgomery County, PA, PennDOT District 10 – Performed drainage design, post construction storm water management, and erosion and sediment control design complete reconstruction of an urban roadway with intersection improvements. Post construction storm water management included design and specification of Filterra Bioretention Systems, a single tree self-contained bioretention facility and curb inlet for water quality. Performed HEC-RAS modeling of the Stony Creek floodplain and floodway for the rehabilitation of two stone arch bridges that are over 100 years old and the replacement of another bridge. HEC-RAS modeling and floodplain mapping were done in support of both a FEMA Conditional Letter of Map Revision application and a US Army Corps of Engineers/PA Department of Environmental Protection Joint Permit Application. Outside of RVE



BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS

P. O. Box 2649

Harrisburg, PA 17105-2649

10/03/2024

License Information

STUART K GAUSE

WILLOW GROVE, Pennsylvania 19090

Board/Commission:	State Registration Board for Professional Engineers, Land Surveyors and Geologists	Status Effective Date:	10/01/2015
LicenseType:	Professional Engineer	Issue Date:	04/21/1997
Specialty Type:		Expiration Date:	09/30/2025
License Number:	PE052618E	Last Renewal:	08/17/2023
Status:	Active		

Disciplinary Action Details

No disciplinary actions were found for this license.

This site is considered a primary source for verification of license credentials provided by the Pennsylvania Department of State.



EnviroCert International, Inc.
3054 Fite Circle, Suite 108, Sacramento, CA 95827
(279) 888-6911 | www.envirocert.org

Stuart K. A. Gause

CPESC

Certified Professional in Erosion and
Sediment Control

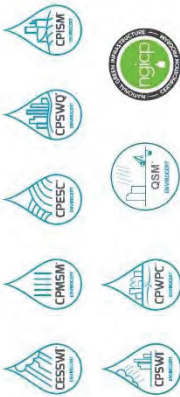
3558

CERTIFICATION NO.

31-Dec-25

EXPIRES

ENVIROCERT
International, Inc.



NOTICE:
All certified professionals are required to adhere strictly to the Code of Conduct and Ethics and are responsible for maintaining their active status with ECI to exercise the rights and privileges under this certification.

Erik Ruenes, PE

H&H Engineer

Overview

- More than 20 years of engineering experience
- Experience includes H&H analyses, scour analyses, bridge renovations, and storm drain design
- Proficient in HEC-RAS, ArcMap, HEC-HMS, and many others

Work History

RVE experience: 2021 to present

Total experience: 20 years

Education

M.B.A. Virginia Tech, 2011

B.A., Pennsylvania State University, 2011

Certifications/Registrations

Professional Engineer – MD, DE

Representative Project Experience

Flood Mitigation Program – Lining Project, West Chester Borough, PA – Stormwater Engineer responsible for expand-in-place manhole to manhole lining of selected storm sewers in the Borough of West Chester. This work includes a post installation televised inspection of the storm infrastructure connections. All storm infrastructure connected to the main infrastructure is to be inspected from the storm main infrastructure for 1 mile. Phase 1 work is to be conducted as South High Street at 10" in diameter. Phase 2 work is to be conducted at East Miner Street at 10" in diameter, West Union Street at 12" x24", Wollerton Alley at 10" and North Wayne Street at 10". Phase 3 work is to be conducted at East Miner Street at 10" in diameter, South High Street at 10", West Union Street at 12" x24", South New Street at 12" x24", Wollerton Alley at 10", West Market Street at 24", North Wayne Street at 24", Pine Alley at 10", East Chestnut Street (from North High Street to Law A1) at 24" and East Chestnut Street (from Law A1 to North Walnut Street) at 10".

MS Services, West Chester Borough, PA – Stormwater Engineer responsible for MS4 services for West Chester Borough. Outreach services include filling out the Public Education Plan worksheet for PADEP submission, distributing stormwater brochures to businesses residents and schools, taking out an advertisement in the local newspaper and presenting components of the MS4 and Illicit Discharge Detection & Elimination Program at a public meeting. RVE is performing visual screenings of the stormwater outfall, conducting tests of selected pollutants, assisting the Borough in locating source of discharge if dry weather flow is beyond PADEP limits, taking appropriate action to correct discharges and documenting outfall screening activities using PADEP procedures. RVE is responsible for construction stormwater runoff management, post-construction stormwater runoff management and pollution prevention.

Haines Run Streambank Restoration, Upper Merion Township, PA – Stormwater Engineer for this project. The Wissahickon Creek breached the Haines Run streambanks behind the Upper Merion Wastewater Treatment Facility. This caused flooding at several buildings located at the facility as well as damages to wastewater treatment equipment. RVE provided engineering services associated with design improvements for Haines Run in the area alongside with Wastewater Treatment Facility, improved flood protection for the facility, identified and pursued grant funding, and incorporated this project into MS4 credits and annual program goals. RVE completed berm and streambank improvements near gate access at the Wastewater Treatment Facility, which significantly improved protection of the plant from rising water levels at this location. Further work is being designed for upstream controls for long-term flood mitigation.

Phoenixville Drainage Study, Phoenixville Borough, PA – H&H Engineer responsible for a drainage study to address stormwater flooding issues in four locations within the Borough. The primary goal of the study was to develop recommendations for mitigating flooding issues. RVE performed Hydrology and Hydraulic (H&H) modeling to calculate the stormwater flows within the watershed of each flooding area and to determine the capacity of the existing storm sewers. The H&H modeling enabled RVE to model the potential benefit of different mitigation measures such as installing additional storm sewers and inlets, improving the capacity of existing storm sewers, or the construction of new or enlarged detention basins. The report included recommendations on the location of new storm sewer and inlets, the length/size of storm sewer replacement, and detention basin sizing, as well as implementation guidance on property ownership, budgetary project costs, anticipated permitting, and estimated project timelines. Phase I services included attending meetings with Borough Staff to review the project goals and available storm sewer mapping, reviewing available records, and performing field data collection for the Borough's storm sewer system within each of the watershed areas and downstream to the outfall or Borough boundary. RVE provided a detailed report presenting the results of the watershed study in each area along with recommendations for mitigating the flooding issues.

Christopher Ross, SP, C M

IS Administrator

Overview

- More than 20 years of geographic data analysis experience
- Areas of expertise: advanced data management analysis, server management, web site design, field mapping, webapp design and cartographic production for technical reports and presentations and compilation and analysis of field data

Work History

RVE experience: 2017 to present

Total experience: 20 years

Education

B.A., Geography, Rutgers University, 200

Certificate, Cartography, Rutgers University, 200

Certificate, Environmental Economics, Cook College & Rutgers University, 200

A.A.S., Civil Engineering Technology, Mercer County Community College, 201

Certifications/Registrations

Certified Floodplain Manager (CFM), 201

IS Professional (ISP), 201

Member, New Jersey Association of Floodplain Managers (NJAFM), New Jersey Geospatial Forum & Urban and Regional Information Systems Association (URISA)

Representative Project Experience

Hydraulic and Hydrologic Studies Related to the Proposed EW Arterial Expansion Project, National Roads Authority (RA), Grand Cayman, Cayman Islands – IS Administrator for the pre-project hydraulic and hydrologic studies for the East-West Arterial Project in Grand Cayman, analyzing existing conditions, rainfall patterns and drainage flows to support both the Environmental Impact Assessment (EIA) and highway design phases. Services include compiling rainfall data, conducting statistical analysis, assessing water quality and determining design parameters using specialized software. The project encompasses analyzing conveyances, watershed hydrology, topographic mapping and considering factors like soils, geology, future land use, tidal data and groundwater recharge, with RVE utilizing various tools and methods such as HEC-RAS software and the rational method. Additionally, RVE is tasked with project management, scenario modeling, including sea-level rise impacts and preparing a comprehensive summary report of analysis findings.

MS Stormwater GIS Mapping, Cheswold, DE – IS Administrator responsible for providing PDES Storm Drainage and Inspection Program mapping services for the Town of Cheswold, DE. Tasks included creating/updating the GIS Storm Drainage Infrastructure Mapping and attributed database utilizing latest Esri ArcGIS software applications and GIS grade point data collection. Tasks also included GIS locating stormwater assets inspecting and assessing the structural integrity of each stormwater asset developing a GIS base map foundation showing streets, roads, railroads, waterways and general parcel data adding the Town's MS4 system field data to the existing DelDOT PDES Database and providing Town staff with a web based PDES Map Viewer showing all structures, pipe connectivity and condition assessment and producing the new storm sewer infrastructure map.

Buck Creek Watershed Restoration Assessment, Ardley Borough, PA – IS Administrator responsible for the creating of a watershed restoration program to restore the Buck Creek Watershed in Ardley, PA. A visual assessment via GIS map hosting services utilizing the Esri ArcGIS Server platform was completed. Tasks included hosting the Borough's interactive watershed map displaying the stormwater system, physical structures as well as businesses and other informative layers. RVE created an Esri ArcGIS Online Hub site to engage with the public as to the location of the watershed areas in relation to the existing storm infrastructure, parcel information and zoning displayed. Efforts to create the online hub site and interactive applications included scoping for hosting and web maps inventory/assemble existing applicable GIS resource layered maps creation of the interactive web applications needed for public viewing publishing map services and generating web maps.

Pollution Reduction Plan Preparation and Storm Sewer Mapping, Lower Makefield Township, PA – IS Administrator responsible for the preparation of a Pollution Reduction Plan and storm sewer mapping for the Township of Lower Makefield, PA. Tasks included the revision of existing storm sewer system mapping and prepared a pollution reduction plan that calculates the Township's pollution contribution through its storm sewer system based on the revised map. Mapping services included meeting with Township staff to review the study area reviewing available storm sewer plans adding inlets and storm sewer from recent land development projects compiling inlets, outfalls and best management practices on a GIS layer which was integrated with the Township's current GIS mapping and identifying drainage areas for storm sewer outfalls.

**ASSOCIATION OF STATE
FLOODPLAIN MANAGERS, INC.
CERTIFICATION BOARD OF REGENTS**

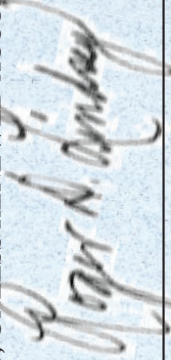
HEREBY CERTIFIES THAT PURSUANT TO THE PROVISIONS OF THE CHARTER FOR THE
CERTIFIED FLOODPLAIN MANAGER PROGRAM

Christopher J. Gross, CFM

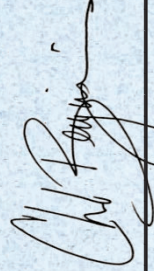
IS DULY REGISTERED AS AN

ASFPM CERTIFIED FLOODPLAIN MANAGER

IN TESTIMONY WHEREOF THIS CERTIFICATE HAS BEEN ISSUED BY THE AUTHORITY OF THE CERTIFICATION BOARD OF REGENTS, CERTIFICATE NO. US-15-08355, ISSUED 4/16/2015. THIS CERTIFICATE SHALL EXPIRE 7/31/2025, UNLESS RENEWED ACCORDING TO THE RULES OF THIS BOARD.



CERTIFICATION BOARD OF REGENTS
PRESIDENT, ROGER LINDSEY, P.E., CFM



ASSOCIATION OF STATE FLOODPLAIN MANAGERS
EXECUTIVE DIRECTOR, CHAD M. BERGINNIS, CFM



Ethan C Snyder

IS Technician

Overview

- Areas of expertise include AutoCAD, Arc GIS Map, Arc GIS Pro, Esri Field Maps, GIS, Trimble TerraSync, database design & management
- Programming Skills include C/C++, C with .NET and ASP.NET, BASH, HTML, CSS, SQL, and Python

Work History

RVE experience: 201 to Present
Total experience: years

Education

B.S. Computer Science and Software Engineering, Minor in Mathematics- Pensacola Christian College, 201
OSHA 10 Certified
MAC URISA Mid Atlantic Chapter Member

Representative Project Experience

Hydraulic and Hydrologic Studies Related to the Proposed EW Arterial Expansion Project, National Roads Authority (RA), Grand Cayman, Cayman Islands – IS Technician for the pre-project hydraulic and hydrologic studies for the East-West Arterial Project in Grand Cayman, analyzing existing conditions, rainfall patterns and drainage flows to support both the Environmental Impact Assessment (EIA) and highway design phases. Services include compiling rainfall data, conducting statistical analysis, assessing water quality and determining design parameters using specialized software. The project encompasses analyzing conveyances, watershed hydrology, topographic mapping and considering factors like soils, geology, future land use, tidal data and groundwater recharge, with RVE utilizing various tools and methods such as HEC-RAS software and the rational method. Additionally, RVE is tasked with project management, scenario modeling, including sea-level rise impacts and preparing a comprehensive summary report of analysis findings.

Dewey Beach GIS Stormwater Mapping, Dewey Beach, DE – IS Technician responsible for providing GIS services for the stormwater mapping update on behalf of Dewey Beach, DE. The project included an inventory of the existing stormwater management facilities within a specified area of the Town utilizing AutoCAD and Esri mapping software applications and then creating a GIS geodatabase. Land surveying and GPS data collection support services were provided along with the televising of pipe to trouble shoot areas where water is collecting and not draining properly. The Town's specific area of concern was Rodney Avenue, Read Street and McInley Street from SR 1 to Rehoboth Bay. RVE verified and created digital maps of the stormwater pipes and the structures, including the outfalls. This area is designated as a pilot area for review by the Town.

Interactive Stormwater Map Hosting, Warminster Municipal Utility Authority, PA – IS Technician responsible for providing interactive Stormwater GIS Web Hosting mapping services to the Warminster Municipal Utility Authority in Warminster, PA. RVE created an Esri ArcGIS Online Hub site to engage with the public as to the amount of impervious surface that may exist on their properties. The public interactive viewer application allows the members of the community to search for their property by address or by parcel ID. The application can zoom to the resident's property and display the impervious surface as a shaded polygon as well as display the square footage of impervious surface on their property.

Sanitary and Stormwater Mapping, Princeton, NJ – IS Technician responsible for GIS sanitary and stormwater mapping on behalf of Princeton, NJ. Tasks include creating and updating applicable sanitary sewer and stormwater system GIS layers based on digital drawings provided by the municipality and by field surveying existing infrastructure on a limited basis. Layers included attribute information, as available. GIS data management and surveying was conducted in a manner compliant with current state requirements. Map layers were uploaded to the Municipality of Princeton's ArcGIS Online where they were published in web maps for public and municipal use. Tasks also included gathering, inventorying and compiling existing documents creating and updating the infrastructure assets using scanned and digital drawings attaching drawings and permits to separate layers and GPS survey of missing/incomplete infrastructure information.

Project Experience

Haines Run Streambank Restoration

Upper Gwynedd Township, PA

Client:

Upper Gwynedd Township

Reference:

Sandra Brookley Zadell, Township Manager
215-699-7777
szadell@uppergwynedd.org

Project Duration:

September 2020 to Present



RVE is providing engineering services for the construction of streambank stabilization measures along Haines Run to restore the eroded streambanks, reduce downstream sediment loading into Wissahickon Creek and mitigate flooding in the area. The streambanks along Haines Run are currently in fair to poor condition and are eroded at several locations. There is evidence of active bank failure with minimal stabilization from vegetation. Trees in the area have been undermined as a result of erosion. Several areas along the stream exhibit extensive sediment accumulation which impacts the existing flooding conditions.

The portion of Haines Run that will be restored spans approximately 2,375 linear feet. The project will include removing the sediment bars in the stream within the project limits to increase the overall capacity of the stream channel. The streambanks will be regraded and stabilized with vegetated coir logs and landscape vegetation. The coir logs will consist of coconut coir fiber and will be utilized for erosion control along the waterline to stabilize the streambanks. Biodegradable vegetative stabilization matting, including planting, topsoil and seeding, will be installed throughout the embankments. The drainage area near the wastewater treatment plant will be regraded to improve the drainage conditions and prevent flooding. To accomplish this, the project site will need to be cleared of some trees and vegetation and much of the site will need to be regraded.

The project will provide several environmental benefits including reduced water pollution, improved aquatic habitat and reduced sediment loading entering Haines Run and the Wissahickon Creek. It is estimated that the streambank restoration work will reduce nitrogen loads by approximately 29.83 lbs/year, phosphorus loads by approximately 13.74 lbs/year and sediment loads by approximately 13.08 tons/year.

The project included a hydrologic and hydraulic (H&H) analysis of a specific section of Haines Run, analyzing existing conditions, modeling mitigation measures and providing recommendations. The scope of services includes tasks such as attending meetings with Township Staff, reviewing existing records, collecting data, conducting hydraulic and hydrologic analysis, preparing a comprehensive study report, discussing implementation guidance and providing final report copies to the Township.

RVE's scope of work includes reviewing TMDL plans, calculating pollution reduction, designing streambank stabilization measures, providing permitting assistance, managing project bidding and overseeing construction management and inspection. The project aims to improve water quality, control erosion and ensure compliance with regulatory standards.

Von Nieda Park & Baldwins Run

Regional Stormwater Study & Alternatives Analysis – Phase I

City of Camden & Pennsauken Township, NJ

Client:

Cooper's Ferry Partnership (CFP)

Duration:

June 2015 to June 2016

Contract Fee Amount:

\$137,675

Reference:

Meishka Michell, Project Manager
856-757-9154
meishka@camdenwaterfront.com



RVE was retained by the Cooper's Ferry Partnership (CFP) in coordination with the City of Camden and Camden County to provide professional engineering and design services for the Von Nieda Park/Baldwin's Run Project. The purpose of this project was to provide professional services to Cooper's Ferry Partnership (CFP) and the local stakeholders for the continuation of Phase 1 of the Von Nieda Park Stormwater Study and Alternatives Analysis for regional drainage improvements.

The improvements addressed the frequent flooding that occurs within the park. RVE completed an H&H analysis of the area to establish potential alternatives to relieve the identified issues and causes for the flooding in the area and region. An alternatives analysis was prepared which identified potential solutions to improve the flooding.

For each alternative, the benefits vs. cons were outlined including cost estimates, permitting requirements, timeframes for construction as well as impacts to the surrounding residential communities during construction. Proposed alternatives included the separation of the stormwater system within Von Nieda Park from the existing combined sewer system that services the residents of Cramer Hill and adequately sized the storm system for the regional area.

This project included a large Public Outreach component due to the historic flooding of the area and the sensitivities of the regional residents. In conjunction with the local stakeholders, the CFP selected the alternative of daylighting Baldwin's Run by adding passive recreation and providing stormwater management for Von Nieda Park, including stormwater quality measures. Work for this project consisted of preparing the necessary construction documents and obtaining the necessary outside agency approvals for this project. Work was based on the concept development of the site, as well as input from the local stakeholders and NJDEP.

This project included passive recreation trails throughout the project site, a pedestrian bridge/boardwalk across the new Baldwin's Run to make use of the entire project site for passive recreational trails and access to the riverfront, new storm sewer system outfall at Harrison Street onto the project site from Von Nieda Park, the creation of a channel/stream from the new outfall to the Delaware River (daylighted Baldwin's Run) in a more direct and convenient location than the original Baldwin's Run and landscaping and other enhancements, including innovative stormwater techniques (**green infrastructure**) including bioretention gardens, green streets and native plantings.

Lansdale Cemetery Stormwater Management Study

Lansdale Borough, PA

Client:

Lansdale Borough

Reference:

John J. Ernst, AIA, Borough Manager,
215-368-1691



RVE was retained by Lansdale Borough to provide engineering services for a stormwater management investigative study to mitigate stormwater flooding at the Whites Road Park. RVE performed a storm water and H&H analysis to determine the cause and alternatives to reduce flooding of the White Roads Park including cost estimates, timeframes for construction, permitting requirements and cost / benefit analysis.

A preliminary screening of the site utilizing the Pennsylvania Department of Environmental Protection (PADEP) eMapPA application revealed that the property in question contributes runoff to a tributary of Towamencin Creek within the Skippack Creek watershed, which is considered a state historic stream. The location of the property did not appear to fall within any special flood hazard areas according to eMapPA and FEMA's flood mapping application. Downstream, however, PADEP established a 100-year floodplain along the creek within Whites Road Park. Establishing the magnitude of flow through the site contributing to Towamencin Creek required a hydrologic analysis of the upstream watershed as well as a hydraulic analysis of the effects of various storms. The results of these analyses were utilized to determine the alternative solutions to relieve the existing downstream flooding experienced at Whites Road Park and to improve water quality. RVE performed Army Corps of Engineers Hydraulic Engineering Center - River Analysis System (HEC-RAS) and Hydrologic Modeling System (HEC-HMS) analyses to model the site and study the impact of stormwater management measures on downstream flooding and storm events.

A report was generated of the Alternatives Analysis which included construction costs, cost / benefit analysis, required permitting, timeframes for construction and pros and cons of each alternative.

Whites Road Park – Unnamed Tributary Hydraulic Analysis, Storm Evaluation, Recommendation, Design/Permitting/Construction Management

Lansdale Borough, PA

Client:
Lansdale Borough

Reference:
John J. Ernst, AIA, Borough Manager,
215 368 1691

Duration:
June 2018 to October 2020

Construction Cost:
\$642,774



RVE was retained by the Borough of Lansdale to provide stream analysis, modeling & an H&H analysis of the White Road Park stream. The unnamed tributary 01080 to Towamencin Creek runs through the park and is part of the Perkiomen Creek Watershed and the Delaware River Basin Watershed. The purpose of the Whites Road Park Streambank Restoration project was to complete an analysis of the tributary to identify the hydraulic deficiencies of the tributary which is leading to bank erosion and toping of the bank during storm events. In addition, the study was to provide recommendations to improve stormwater management, water quality, aquatic habitat, and material loss at the embankments. In September of 2019, the Borough received a \$290,672 grant which supported the extensive study and streambank restoration in the park. While there were no current MS4 specific grants available, RVE was able to utilize the Commonwealth Financing Authority grant to not only correct an environmental issue, but also reduce annual out of pocket expenses required to comply with the mandated MS4 program. The grant helped to remove sediment bars and plant vegetation along the streambanks.

This project consisted of the H&H analysis, identification of backwater conditions and design, permitting and construction administration of the proposed improvements. The streambank restoration improvements included approximately 1,320 linear feet of the tributary in Whites Road Park. Work for this project included the stabilization of the streambanks, slope protection, sediment removal, removal of trees, removal of deteriorated gabion baskets, and culvert lining replacement. Rock protection was placed at the abutments to reduce the potential for erosion, while the streambanks were stabilized with vegetated coir logs and landscape vegetation. The coir logs consisted of coconut coir fiber and were utilized for erosion control along the waterline to stabilize the streambanks. Vegetative stabilization matting included plantings, topsoil and seeding. The riparian buffer will act as a biofilter and will shade the stream. The shade will control the temperature of the water and therefore allow aquatic life to thrive. Restoring and stabilizing the streambank reduced the Borough's sediment loading and mitigated the loss of the embankments.

During the initial stages of construction, there was opposition from the local community in regard to the removal of trees at part of the site clearing activities. Several of the trees along the embankments had to be removed to regrade the slopes. A considerable number of trees were either dead, undermined or within the re-grading area. Local politician and the community residents shared their concerns with the Borough.

RVE met with Borough personnel on site to provide further clarification of the intent of the project. Once the Borough was able to gain a better understanding of the end result the information was presented to the community at large. The Borough was reassured that additional landscape plantings would be installed on the embankments and within the riparian buffer zones. The project gained positive momentum from the community as the construction proceeded and the project site began to take shape. At the end of the project the Borough received several comments from residents on how beautiful the park looks.

Phoenixville Drainage Study

Phoenixville Borough, PA

Client:

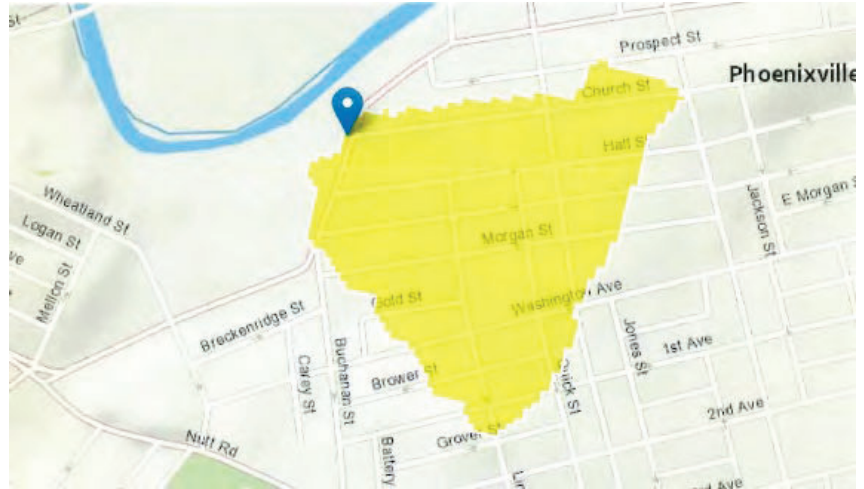
Borough of Phoenixville

Reference:

E. Jean Krack, Borough Manager
610-933-8801

Project Duration:

February 2023 to February 2024



RVE provided engineering services for a drainage study. This study was to address repeated and severe stormwater flooding issues in four locations within the borough. The flooding in these areas inundated public roadways and led to property damage. The borough received reports from property owners, along with photographic evidence of the flooding, and requested the assistance of RVE to investigate these issues.

The primary goal of the study was to develop recommendations for mitigating the flooding issues. RVE proposed to delineate watershed areas for the flooding at each study area using GIS collection equipment to collect data for unmapped storm sewers within the flooding area and downstream to the outfall or Borough boundary. RVE used this information, along with statewide LIDAR data, to model the performance of the existing stormwater collection and conveyance infrastructure.

RVE performed Hydrology and Hydraulic (H&H) modeling to calculate the stormwater flows within the watershed of each flooding area and to determine the capacity of the existing storm sewers. The H&H modeling enabled RVE to model the potential benefit of different mitigation measures such as installing additional storm sewers and inlets, improving the capacity of existing storm sewers, or the construction of new or enlarged detention basins. The report included recommendations on the location of new storm sewer and inlets, the length/size of storm sewer replacement, and detention basin sizing, as well as implementation guidance on property ownership, budgetary project costs, anticipated permitting, and estimated project timelines.

Phase I services included attending meetings with Borough Staff to review the project goals and available storm sewer mapping, reviewing available records, and performing field data collection for the Borough's storm sewer system within each of the watershed areas and downstream to the outfall or Borough boundary. RVE provided a detailed report presenting the results of the watershed study in each area along with recommendations for mitigating the flooding issues.

Townsend Street Combined Sewer Separation

Chester, PA

Client:

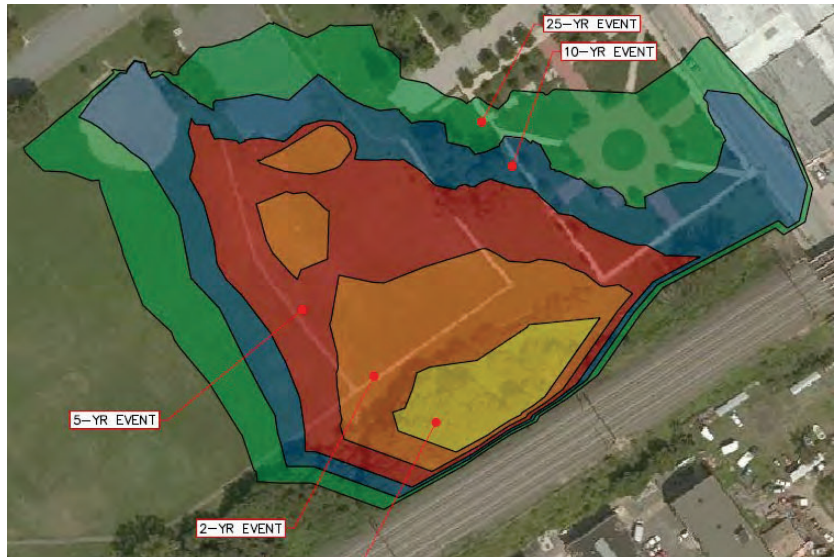
Delaware County Regional Water Quality
Control Authority (DELCORA)

Reference:

Robert Willert, Executive Director
610-876-5523
willertr@delcora.org

Project Duration:

February 2019 to Present



RVE was retained by DELCORA to provide preliminary and final engineering design services, project bidding, part-time construction inspection and contract administration for the separation of storm and sanitary sewer flows along Townsend Street and reduce the occurrence and severity of flooding within Veteran's Memorial Park. The project includes the construction of a new 38"x60" reinforced concrete elliptical pipe (RCEP) storm sewer along Townsend Street and the modification of two stormwater vaults. The new stormwater conveyance pipe will remove the park's stormwater discharge from the existing 48" combined sewer system (CSS) on Townsend Street and discharge it back into the system beyond the CSS regulator (CSO-5) and tide gates. The proposed RCEP will also intercept an existing PennDOT stormwater conveyance system, along with inlets.

The PennDOT stormwater conveyance system currently discharges to DELCORA's CSS between the regulator and tide gates. This configuration has previously resulted in stormwater backflowing into the interceptor to the Western Regional Treatment Plant (WRTP). The proposed configuration will redirect PennDOT flows, along with flows from the Park to a point downstream of the tide gates. This will eliminate a source of backflow to WRTP. Other work related to the project includes roadway reconstruction and the relocation of various utilities.

Preliminary engineering design services included a full hydrologic and hydraulic analysis confirming the level of service for conveyance, establishing the catchment/watershed area, confirming the proposed pipe diameters for all proposed stormwater conveyance piping improvement and serving as the foundation to support utility designs. Services also included report generation, meetings with stakeholders and report revisions from stakeholder meetings.

The methodology used in the hydrologic analysis consisted of the USDA Natural Resource Conservation Service Technical Release No. 55 (TR-55) Urban Hydrology for Small Watersheds for site runoff parameters and the USDA Soil Conservation Service unit hydrograph method as included in PondPack for Windows v8.i computer software, by Bentley Systems, Incorporated, for hydrograph determinations. The standard SCS unit hydrograph (Type II) was used in the analysis due to the location and character of the drainage area and its soils. Similarly, in order to determine if there would be any impact on the existing PennDOT conveyance system as a result of it being rerouted through the proposed RCEP conveyance system, associated inlet drainage areas were delineated and analyzed. The Rational Method was utilized in the analysis of these areas within StormCAD V8i (SELECTseries 5) computer software, by Bentley Systems, Incorporated.

Final engineering design services included final hydrologic and hydraulic analysis report generation, field survey, utility plan with profiles, jack and bore operation/plan generation, geotechnical engineering, permitting and relocation, technical specifications, traffic control/detour plan generation, erosion and sediment control plan with details, construction details, cost estimation and project coordination including meetings. RVE will also be providing project bidding, part-time construction inspection and contract administration services including submittal review/RFIs, construction phase engineering and project closeout.

Municipal Separate Storm Sewer System (MS4) Projects

Various clients throughout Pennsylvania – Partial Listing

Clients:

Charleroi Borough
Robinson Township
Kennedy Township
Lower Makefield Township
Middletown Township
Newtown Township
Yardley Borough
West Chester Borough
Upper Gwynedd Township
Phoenixville Borough
East Norriton Township



RVE has successfully managed the MS4 program for a multitude of clients over the last decade. Our firm is intimately familiar with the state statutes and requirements. In addition, we have excellent relationships with the PADEP and have been able to achieve positive results for our clients.

Our scope of work includes the following elements:

- Public Education & Outreach – Services include: filling out the Public Education Plan worksheet for submission to the PADEP; placing a stormwater newspaper ad in a local paper on behalf of the Municipality and documenting proof of the ad for submission to the PADEP; distributing stormwater brochures to businesses, residents and schools.
- Public Involvement & Participation – Services include: filling out the Public Involvement and Participation Plan worksheet for submission to the PADEP; presenting components of the MS4 Program and the Illicit Discharge Detection & Elimination Program at a public meeting; and continuing to work with the Municipality's Public Works Department for storm drain inlet stenciling throughout the Municipality per the DEP protocol.
- Illicit Discharge Detection & Elimination – Services include: performing visual screenings of the stormwater outfall during dry weather for the entire system; conducting field and laboratory tests of selected pollutants if dry weather flows are observed; assisting the Municipality in locating the source of the discharge if tested dry weather flow is beyond PADEP limits, determining if the flow is from illegal dumping or an improper connection, and taking the appropriate action to correct the discharge; and documenting all outfall screening activities using PADEP procedures.
- Construction Stormwater Runoff Management – Services include continuing to monitor construction site erosion and sediment controls for adherence to plan specifications and permit requirements in accordance with the Municipality's Stormwater Ordinance.
- Post-Construction Stormwater Runoff Management – Services include attending a meeting with the Municipality to discuss current stormwater best management practices (BMPs) and assisting the Municipality with their inventory regarding the current post-construction stormwater management BMPs to ensure operation and maintenance responsibilities are understood and monitored.
- Pollution Prevention & Good Housekeeping for Municipal Operations and Maintenance – Services include: providing direction on the required inspections of the municipality's stormwater system; attending meetings with the Public Works Departments to document the results of the inspection including its current condition, needed maintenance and repair, and plans to address any problems; working to update the current stormwater operation, maintenance and inspection program as necessary; updating the current vehicle operation, maintenance and inspection program as necessary; and assisting the Municipality in implementing their Vehicle Operations and Maintenance Program as well as their Stormwater Operations Maintenance and Inspection Program.

Sumneytown Pike Bridge Replacement Project

Upper Gwynedd Township, PA

Client:

Upper Gwynedd Township

Reference:

Sandra Brookley Zadell, Township Manager

215-699-7777

szadell@uppergwynedd.org

Project Duration:

October 2021 to Present



The Sumneytown Pike Bridge over Wissahickon Creek is a deteriorating single-span bridge with advanced corrosion and structural issues. The bridge's superstructure shows cracking, efflorescence and exposed reinforcing steel, while the concrete deck and seats show deterioration. The stone masonry foundation, supported by reinforced concrete abutments and wingwalls, is significantly deteriorated due to high-velocity storm flow and scour. The Township has decided to replace the bridge with a new structure after a condition assessment. The project received funding from a PennDOT MTF Grant of \$1,243,846.00 in April 2021. RVE submitted an additional MTF grant application in November 2022 for design phases and additional scope.

Upper Gwynedd Township has enlisted RVE to conduct a preliminary engineering study to explore alternatives for a bridge replacement. The study aimed to determine feasible alternatives and recommend the most suitable one based on various criteria. RVE conducted engineering studies, analysis and design to determine a recommended alternative. The TS&L report, in accordance with PennDOT standards, outlining the recommended alternative's details, including plans, elevation, cross-section, foundation concept and construction cost estimate.

The project involved surveys, control references and physical features measurements. Geotechnical engineering studies determined the foundation type, while environmental engineering assessed permits. Highway and traffic engineering improved safety, traffic flow and service levels, while utility coordination and structural engineering were crucial components. The study aimed to ensure the bridge's safety and functionality within the Wissahickon watershed.

Construction staging was determined to minimize disruption to the community, assessing its impact on residents, businesses and emergency services. Stakeholder coordination will be carried out. The final deliverables will include a draft TS&L report, geotechnical and environmental findings, design alternatives, selection criteria, recommended alternative description, cost estimate and TS&L plans.

RVE is providing engineering services for the Sumneytown Pike Bridge Replacement project, aiming to progress it to completion in 2025. The project involves surveying, environmental permitting studies, geotechnical analysis, bridge and roadway replacement design, roadway approach plans, traffic maintenance, erosion control, drainage plans and HEC-RAS analysis. RVE works closely with Township staff and other stakeholders to ensure the project's successful completion, meeting current policies and obtaining necessary approvals.

Ash Brook and Galloping Hill Golf Course Drainage Improvements

Union County, NJ

Client:

County of Union, NJ

Duration:

October 2022 to present



RVE is providing engineering services to improve the stormwater and stream conditions at the two County golf courses known as Ash Brook in Scotch Plains, NJ and Galloping Hill in Kenilworth, NJ. The two courses have been experiencing severe stream bank erosion and flooding during heavy rainstorms and the stream banks at both courses need to be reestablished and stabilized so that flooding occurrences of golf holes and golf cart pathways are minimized and properly maintained. Measures that will be taken to reduce the amount of flooding include the removal of silt deposits and fallen trees as well as improving the overall drainage conditions at the courses.

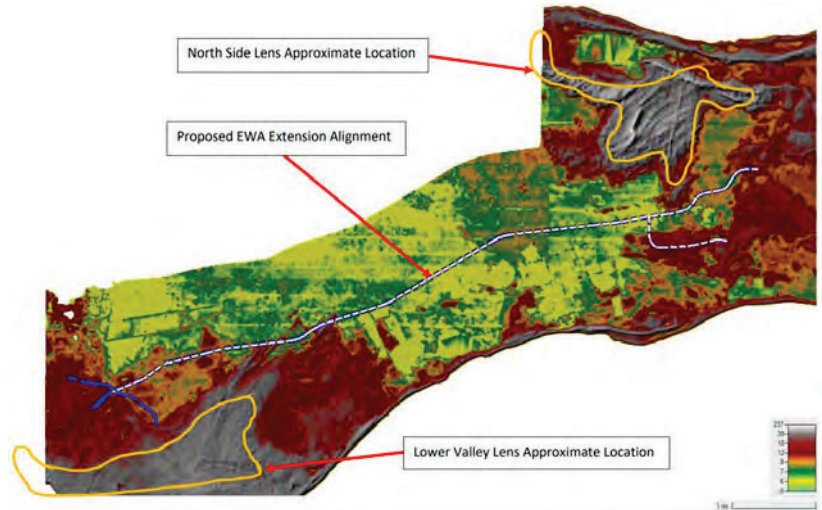
RVE is performing a Hydrologic and Hydraulic (H&H) Analysis for the Ash Brook Golf Course. A similar analysis and subsequent report were previously completed for the Galloping Hill Golf Course. These reports will be utilized in the development of preliminary plans. The H&H report includes a review of the upstream watershed and drainage areas entering the golf course to estimate the amount of inflow during storm events, the analysis of the existing capacity of the streams and water bodies on the golf course, an analysis of means and methods to increase capacity and reduce flooding on the golf course, a review of the downstream areas where the golf course is draining towards to ensure no negative downstream impacts and the outlining of the various intensity storms such as the 2, 10, 25, 50, 100 and 500-year storm and their impacts to the golf course.

Tasks include topographical and construction control surveys utilizing conventional ground survey techniques, the preparation of preliminary documents for the drainage improvements at each golf course and necessary documents for all necessary outside agency permits, final construction documents in accordance with NJDEP and County requirements, the preparation of documents and services required for bid advertisement and construction contract award, shop drawing/submittal review and answer any contractor's questions during the construction phase of the project and design services during construction.

Hydraulic and Hydrologic Studies related to the Proposed EW Arterial Expansion Project Grand Cayman Islands

Client:
National Roads Authority

Project Duration:
April 2022 to present



RVE provided engineering services to perform a Hydraulics and Hydrology study to inform the upcoming Environmental Impact Assessment of the planned extension of the East-West Arterial corridor to Frank Sound Road in Grand Cayman. The study is using rainfall data for the last 40 years to assist the development of watershed delineations and drainage flow patterns for the assessment of surface run-off because of existing and planned developments in the future.

Three software packages including QGIS, HEC-HMS and HEC-RAS were used to perform this study. The results of the rainfall study along with GIS information (LiDAR, land use, and soil information) were input into the models. QGIS was used to extract an approximate general limit of the study area from the larger GIS information that was provided by the client. HEC-HMS was used for delineating the drainage area and subcatchments from the terrain model and to define their characteristics for the model and rainfall-runoff studies. The outputs from the HEC-HMS model, including the delineated drainage area and hydrographs, were input to the US Army Corps of Engineer's Hydrologic Engineering Center River Analysis Program (HEC-RAS) for preparing two-dimensional flood maps of the study area. A two-dimensional hydraulic model was developed to prepare information to design the East-West Arterial Roadway on Grand Cayman Island. Various scenarios of rainfall events and the historic tropical Hurricane Ivan were studied.

Tasks include hydrologic research and analysis, the analysis of inland conveyances and watersheds hydrology, topographic mapping, soils and geology, and satellite imagery.



sent via email: DEdwards@west-chester.com

December 10, 2024

Don Edwards, Director of Public Works
Borough of West Chester
205 Lacey Street
West Chester, PA 19380

RE: Proposal for Professional Engineering Services
Goose Creek Flood Mitigation Study
Borough of West Chester, Chester County, Pennsylvania

Dear Mr. Edwards:

T&M Associates is pleased to provide the Borough of West Chester (Client) with this proposal for professional engineering services for the development of cost-effective recommendations to mitigate historical flooding associated with Goose Creek.

Project Background

T&M Associates is in receipt of a Request for Proposal email, transmitted on April 14, 2024, by the Borough of West Chester Staff. The RFP highlights the goal of generating recommendations to mitigate historical flooding associated with Goose Creek and provides fifteen (15) bulleted points to be utilized in generating a proposal scope.

It is understood that the calculations, plans, reports and/or documents included in the scope are solely for review by Borough of West Chester Staff. Documents will not be submitted to Authorities Having Jurisdiction (AHJ) for receipt of permits associated with proposed improvements. The Borough of West Chester will be responsible for obtaining access to private property within the Borough for T&M staff and/or it's subconsultants. The scope of the Base Study extends from Route 202, northward to the intersection of Lacey Street and Magnolia Street/Maple Alley.

Additionally, alternatives to the Base Study are provided to enhance the results generated by the proposed Hydraulic and Hydrologic Analysis.

T&M offers the following scope and fees to provide professional services, prepare plans and reports to facilitate review of the staff and/or officials of the Borough of West Chester.

Scope of Services

BASE STUDY

PHASE 100: PRE-ENGINEERING SERVICES

LUMP SUM FEE TOTAL \$5,100

101. PROFESSIONAL LAND SURVEYING SERVICES

T&M will prepare a field survey of the of the stream channel and outer bank area of the stream for FEMA FIRM Cross Sections F, G and H. The detailed flood survey will generally represent the floodway through the cross-section plus an additional 50 feet past the FEMA Floodway



limit. The remaining elevations across the FEMA section will be determined from LIDAR Topographic mapping.

PHASE 200: SITE/CIVIL DESIGN SERVICES

LUMP SUM FEE TOTAL \$21,500

201. HYDROLOGIC/HYDRAULIC ANALYSIS

T&M will begin an updated HEC-RAS (Flood Study) analysis from the Route 202 Culvert northward to the intersection of Lacey Street and Magnolia Street/Maple Alley. The HEC-RAS analysis will use PASDA Lidar data supplemented with the limited survey data included in this scope. T&M will also field verify any fallen tree locations and gravel/silt deposits in the stream channel for evaluation for removal and estimated effect on floodwater elevations/extents. T&M will run existing flow scenarios for the 2- through 500-year storm events. Upon production of initial modelling results we will review with Borough officials for a confirmation of observations with known storm events and make adjustments as necessary. Thereafter, we will seek to rectify inconsistencies between the FEMA mapped floodplain lines and the HEC-RAS model results. We will plot the model results in a presentable format of what we believe is a better estimate of the actual existing floodplain conditions during various storm events.

Upon review of the existing HEC-RAS analysis, T&M will coordinate with Borough Staff on mitigation options within Goose Creek. T&M will then model the selected options (three maximum) as part of a sensitivity analysis of physical improvement modifications and resultant effect on the floodplain, as compared to the existing calculated floodplain. T&M will run proposed flow scenarios for the 2- through 500-year storm events. These results will be presented to the Borough for selection of a preferred option.

202. OPINION OF PROBABLE COST AND SCHEDULE

T&M will review the Flood Study analysis results with Borough staff, specifically the proposed mitigation options for Goose Creek in order to select the preferred option. Upon selection of the preferred mitigation option T&M will prepare an opinion of probable cost and approximate schedule (permitting and construction). The cost estimate will include estimates for associated Site Work and/or Earth Work.

Costs associated with Demolition, Erosion and Sediment Control, Landscaping, Temporary Construction Fencing, Traffic Control and Utility Relocation/Improvements will not be included in the cost estimate.

203. GOOSE CREEK MITIGATION REPORT AND PLAN

T&M will prepare a Mitigation Report for Borough Staff review containing the existing H&H Analysis, proposed H&H Analysis, summary of findings and recommendations, cited cost estimated, cited project schedule and a Mitigation Plan and associated mapping. The Mitigation Plan will contain a Plan view of the selected (preferred) mitigation option with an associated cross-section.

The plan set is being prepared for review by township staff and not intended for submission to Authorities Having Jurisdiction for permitting purposes. Preparation of plans, drawings, details and/or calculations for submission to AHJ will be completed at an additional cost.



PHASE 1100: MEETINGS, CONSULTATION, COORDINATION AND DOCUMENT REVISIONS
TIME AND MATERIAL BUDGETARY ESTIMATE \$5,500

T&M anticipates the following meetings, whether virtually or in person: five (5) meetings with Borough staff and client directed meetings. Additionally, one (1) revision of the Hydrologic and Hydraulic Study, Mitigation Plan, Opinion of Probable Cost, and Schedule is included with this phase. Due to the uncertainty, as to the extent of our requested involvement with meetings, project management, coordination, or the need for additional professional consultation, meetings will be completed on a time and materials basis.

ADDITIONAL SERVICES

ALTERNATE (ALT) ONE – EXPANDED LAND SURVEYING SERVICES **LUMP SUM FEE \$7,100**

To better characterize the hydraulics of the stream channel in the existing condition, we would recommend that the stream corridor have the bottom and top of banks field surveyed, and stream obstructions such as bridges and culverts, and other permanent obstructions of stream flow, be surveyed. The area of the recommend survey would be from the Borough Line to Lacey Street with an approximate total stream length of 2,400 feet. This effort will include obtaining vertical and horizontal locations of the stream channel. Typically, this would include survey locations every 50 feet, and, changes in channel alignment and slope. This information will be merged into the LiDAR surface allowing for a detailed three-dimensional stream corridor and overbank area to be created which could be hydraulically modeled within HEC-RAS.

REIMBURSEABLE EXPENSES

Reimbursable Costs will be billed on a reimbursable basis in accordance with our attached “Schedule of Miscellaneous Charges”. Reimbursable Expenses include, but is not limited to, reproductions, copies, plots, delivery costs, travel expenses, and express and standard mail costs.

FEE SUMMARY TABLE

Item No.	Description	Lump Sum Fees	Time and Mat. Budgetary Estimate Fees
PHASE 100	Pre-Engineering Services	\$5,100	
PHASE 200	Site/Civil Design Services	\$21,500	
PHASE 1100	Meetings, Consultation, Coordination And Document Revisions		\$5,500
SUBTOTAL		\$26,600	\$5,500

- ALT 1 – Expanded Land Surveying Services: Lump Sum Fee, \$7,100



Assumptions

The following assumptions have been used to determine T&M's efforts in performing the scope of services outlined above:

- It is assumed documents prepared in association with this proposal will not be submitted to AHJ. Document preparation for submission will be done at an additional cost.
- This scope does not include meetings with AHJ.
- The schedule prepared as a part of this scope is approximate.
- Five (5) meetings are anticipated with Borough Staff. Three (3) are assumed to be in person and two (2) are assumed to be virtual.
- One (1) Revision of documents is included.
- Borough staff is responsible for obtaining access to private property for T&M Staff and/or it's subconsultants.
- GPR and/or utility one call is not included within the survey scope.
- Environmental studies will be performed by others and the site will not require remediation.

If any of the above assumptions are inaccurate, please notify us and we will prepare a revised proposal. The previously described scope and fee has been established based on the assumptions.

Additional Services

The following additional services are not included in the scope of this proposal.

- Application(s) to AHJ including but not limited to Borough of West Chester, DEP and/or CCCD.
- Landscaping Design
- Utility Design
- Erosion and Sediment Control Design
- Post Construction Stormwater Management Design.
- Phase 1 Environmental Site Assessment
- Construction Administration including but not limited to RFI review, submittal review, Bid assistance, construction documents, construction inspections.
- Civil Specifications
- Environmental studies including but not limited to mitigation/compensation plan.
- Highway Occupancy Permits
- Payment of any permit fees or application fees for this project.
- Color Renderings, other than those cited above.
- Bid Phase Services including but not limited to review of Site Bid Packages, bidder RFI's.
- Off-site Water, Sanitary or Storm Main Design.
- Offsite stormwater management study or downstream drainage analysis.
- Traffic Signal Permit Plans, Right-of-Way Plans, Detour Plans, or other PennDOT Plans.
- Speed Studies.
- As-built plans, construction stakeout, setting property corner monuments and pins. Benchmarks for construction to be set under separate contract b/w T&M and the client.
- Subsurface Utility Survey.
- Easement Exhibits and Legal Descriptions.
- LEED design and consulting.
- Impact Studies including utilities, recreation, fiscal, municipal services, historic, archeological resources, environmental, and hydrogeologic.



- PA DEP Permits, other than those listed above, including Chapter 105 individual permits, joint permits, dam permits, enclosure permits and mitigation plans.
- Watercourse/wetland Jurisdictional Determination.
- Retaining wall, stairs, ADA ramps (not including curb ramps which are included), culvert, bridge, or other special structure design; trench shoring details, structural shop drawing review and/or concrete mix design review. It is understood that site retaining wall, stair, and ramp design that is attached to the building is to be provided by the architect.
- Specific Performance Standard Studies such as Capacity of Road Network, Impacts on Road Network, Water Consumption, Fire Protection, Noise, Dust, Odor, Heat, Glare, Vibration, Storage & Waste Disposal, Radioactivity & Electrical Disturbances, etc.
- Environmental Assessment Reports (Phase I, II, or III) and any exploratory or testing work; interpretations or conclusions related to determination of potential chemical, toxic, radioactive, or other types of contaminants on the site.
- Detailed tree survey of wooded tree cluster areas unless required by ordinance.
- Endangered species analysis & Phase II assessment report.
- Work associated with revisions resulting from changes to local, state and/or federal codes and regulations, enacted after the date of this proposal unless should have been reasonably anticipated or known.
- Adjoining property notifications (if required, it is assumed that this will be handled by the client's attorney and Township)
- NPDES Notice of Termination.
- Additional work not identified as part of the Scope of Services.
- Landscaping design above code required landscaping.



We thank you for the opportunity to submit this proposal, and we look forward to working with you on the successful completion of this project. Should you have any questions or require any additional information, please do not hesitate to contact us. Should you find the terms of this proposal and our Terms and Conditions of service acceptable please indicate your acceptance by signing below and returning one (1) copy to this office.

Very truly yours,
T&M Associates Consulting Engineers

A handwritten signature in black ink, appearing to read 'David Stewart'.

David Stewart
Group Manager

A handwritten signature in black ink, appearing to read 'Keith Lieberman'.

Keith Lieberman, PE
Senior Vice President Operations, Regional Operations Manager

The undersigned, having power to bind the Client, has read, understood, and hereby accepts this proposal.

(Signature)

(Print name)

(Date)



STANDARD TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

These Standard Terms & Conditions shall govern the performance of services pursuant to this Agreement.

As used herein, the term "Client" refers to the Client identified in T&M's Proposal / Scope of Services. The term "T&M" refers to T&M Associates. The Client and T&M may be referred to individually as a "Party" or collectively as the "Parties". The term "Agreement" refers to this contract between T&M and the Client consisting of (1) the T&M Proposal / Scope of Services, and (2) these Standard Terms and Conditions. The "Project" is identified in T&M's Proposal / Scope of Services.

1. SCOPE OF SERVICES.

- a. Descriptions of the services to be provided by T&M are set forth in the Proposal/Scope of Services (*the "Services"*). Services not set forth in the Scope of Services, or specifically itemized as additional services, are excluded from the scope of T&M's Services (*the "Additional Services"*) and T&M assumes no responsibility to perform such Additional Services. If any Additional Services become necessary during the course of the Project, T&M can perform such Additional Services in accordance with a written agreement between the Client and T&M for such Additional Services.
- b. T&M shall have no obligation to commence the Services as stipulated in this Agreement and / or any associated work authorization until both this Agreement and any applicable work authorization are fully executed and delivered to T&M.

2. COMPENSATION.

- a. **B I L L I N G R A T E S** . Client shall compensate T&M at the billing rates identified in T&M's Proposal. Unless otherwise provided in the Proposal, compensation for Services shall be based on T&M's Schedule of Hourly Billing Rates and Schedule of Miscellaneous Charges in effect at the time Services are performed.
- b. **R E I M B U R S A B L E E X P E N S E S** . Client shall pay T&M for reimbursable expenses according to the current Schedule of Miscellaneous Charges including, without limitation, application fees, printing and reproduction, courier and express delivery service, bulk / special mailings, facsimile transmissions and other costs of acquiring materials specifically for Client and related charges.
- c. **I N V O I C E S** . T&M shall submit invoices monthly and payment in full is due and payable thirty (30) days from the date of T&M's invoice. Services shall be billed at a minimum increment of 0.25 hour. If Client fails to make any payment due T&M for services and expenses within thirty (30) days after receipt of invoice, the amounts due T&M will accrue interest at the rate of one percent (1.0%) per month until paid in full.
- d. **S U S P E N S I O N O F S E R V I C E S** . Once a payment is PAST DUE, the Client shall be deemed to be in breach of this Agreement and any other agreements between the Client and T&M. If a payment is PAST DUE, T&M may suspend performance of all Services provided to the Client until T&M has been paid all amounts due and T&M shall have no liability whatsoever to the Client for any costs, delays or damages resulting from T&M's suspension of services caused by the Client's breach of this Agreement.
- e. **T E R M I N A T I O N** . Client or T&M may terminate this Agreement with ten (10) days prior written notice for convenience or cause. In the event of termination, T&M shall be paid for all services rendered and costs incurred up to the date of termination in accordance with the payment terms herein.
- f. **C O L L E C T I O N C O S T S** . In the event legal action is necessary to enforce the payment provisions of this Agreement, T&M shall be entitled to recover from the Client the reasonable attorneys' fees, court costs and expenses incurred by T&M in connection therewith.
- g. **F E E D U R A T I O N & A N N U A L A D J U S T M E N T** . The hourly rates charged for T&M employees are adjusted annually in January to reflect changes in the various elements that comprise such hourly rates with a corresponding adjustment in fee. All adjustments in rates will be in accordance with generally accepted practices consistent with T&M's procedures.

3. STANDARD OF CARE.

The standard of care for all professional services performed or furnished by T&M under this Agreement will be the care and skill ordinarily used by members of T&M's profession practicing under similar circumstances at the same time and in the same locality and based on facts and information available at the time services are provided. T&M makes no warranties, expressed or implied in connection with T&M's Services.

4. OWNERSHIP AND USE OF DOCUMENTS.

All reports, plans, specifications, computer files, field data, notes and other files and documents prepared by T&M pursuant to this Agreement (*the "Documents"*) are instruments of T&M's professional services and T&M shall retain an ownership and property interest therein. Provided full payment for Services rendered and costs incurred is made by the Client to T&M, T&M grants to the Client a license to use the Documents for the purpose of constructing, occupying and maintaining the Project. The Documents are not intended or represented to be suitable for reuse by the Client or others on extensions of this Project or on any other project. Any reuse, dissemination, or modification of the Documents without T&M's written approval shall be at Client's sole risk and without liability to T&M and the Client agrees to indemnify, defend and hold harmless T&M from all claims, damages and expenses, including attorneys' fees and costs, arising out of such reuse by the Client or by others acting through the Client.

5. CONFIDENTIALITY.

All information that the Client deems confidential shall be prominently branded "Confidential Information" prior to releasing said information to T&M. T&M will not intentionally divulge information regarding the Project that the Client designates as confidential, except (i) to the Client or parties designated by the Client; (ii) in response to a subpoena or other similar legal requirements; and / or (iii) in the event that withholding such information could create risk of significant harm to the public. Information that is in the public domain, that is provided to T & M by third parties is not considered confidential. Any information that is not clearly marked "Confidential Information" by the Client prior to disclosure to T&M shall not be deemed as confidential. Pursuant to T&M's company retention policy, both Parties shall retain copies of any and all Confidential Information, which shall remain confidential, for archival purposes. The Client authorizes T&M to identify the Client as a T&M client and use photographs or illustrations of the Project and non-confidential information in any sales or marketing literature.

6. CONSTRUCTION COST ESTIMATES.

The Client shall advise T&M in writing of any budgetary limitations for the overall cost of construction. T&M will endeavor to work within such limitations and will, if requested and included within the Proposal / Scope of Services, submit to the Client an opinion of probable construction cost. Opinions of probable construction cost will represent T&M's reasonable judgment as a design professional familiar with the construction industry but do not represent, warrant or guarantee that bids or negotiated prices will not vary or exceed budgets or opinions of probable cost or evaluations prepared or agreed to by T&M. The Client acknowledges that neither T&M nor the Client has control over the cost of labor, materials or methods by which contractors determine prices for construction, competitive bidding, markets, or negotiation conditions.

7. RESPONSIBILITY DURING CONSTRUCTION.

T&M's Services during the construction phase are intended to provide the Client a greater degree of confidence that the completed work of contractor(s) will conform in general to the approved plans and related documents. T&M will endeavor to observe the progress and quality of the executed work of contractor(s) and determine in general if such work is proceeding in accordance with the requirements of the Project. T&M shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of such work. T&M shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by contractors or the safety precautions and programs incident to the work of contractor(s) or for any failure of any contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to a contractor furnishing and performing the work. Accordingly, T&M neither guarantees the performance of any contractor nor assumes any responsibility for any contractor's failure to furnish and perform its work in accordance with the contract documents. T&M shall not be responsible for the acts or omissions of the Client, the Client's other consultants, contractors and their respective subs, agents or employees, or other persons for whom the Client is responsible.

8. SITE CONDITIONS.

T&M shall not be liable for damage or injury to any subterranean structures (*including, but not limited to, utilities, mains, pipes, tanks, and telephone cables*) or any existing subterranean conditions; or the consequences of such damage or injury, if (*with respect to this clause*) (i) such structures or conditions were unknown and were not identified or shown, or were incorrectly shown, in information or on plans furnished to or obtained by T&M in connection with the Services; (ii) concealed conditions are encountered in the performance of the Services; (iii) concealed or unknown conditions in an existing structure are at variance with the conditions indicated by the Proposal / Scope of Services or work authorization; or (iv) unknown physical conditions below the surface of the ground are encountered that differ materially from those ordinarily encountered and are generally recognized as inherent in work of the character provided under this Agreement.

The Client shall provide to T&M all plans, maps, drawing and other documents identifying the location of any subterranean structures on the Site. Prior to location of any drilling or excavation below the ground surface, T&M shall

obtain the concurrence of the Client as to the location for such drilling or excavation. Should: (i) subterranean structures or existing subterranean conditions be unknown and not identified or shown, or be incorrectly shown, in information or on plans furnished to or obtained by T&M in connection with the Services; (ii) concealed conditions be encountered in the performance of the Services; (iii) concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Proposal / Scope of Services or work authorization; or (iv) unknown physical conditions below the ground differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided under this Agreement; then the amount of this Agreement and / or time for performance shall be equitably adjusted by change order upon claim by either Party made within twenty (20) days after the first observance of the conditions.

The Parties agree that reports prepared by or on behalf of T&M pertaining to site conditions, including, but are not limited to, environmental, geotechnical or geologic reports (*hereinafter collectively the "Site Condition Reports"*), are prepared for the exclusive use of the Client and its authorized agents, and that no other party may rely on the Site Condition Reports unless T&M agrees in advance to such reliance in writing. The Site Condition Reports are not intended for use by others, and the information contained therein is not applicable to other sites, projects or for any purpose, except the one originally contemplated in the Services. The Client acknowledges that the Site Condition Reports are based on conditions that exist at the time a study is performed and that the findings and conclusions of the Site Condition Reports may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations, among others. The Parties agree that interpretations of subsurface conditions by T&M and / or its subcontractors may be based on limited field observations including, without limitation, from widely spaced sampling locations at the site of the Project. The Client acknowledges that site exploration by T&M and / or its subcontractors will only identify subsurface conditions at those points where subsurface tests are conducted or samples are taken. The Parties agree that T&M and / or its subcontractors may review field and laboratory data and then apply professional judgment to render an opinion about subsurface conditions at the site of the Project and that the actual subsurface conditions may differ, sometimes significantly, from those indicated by T&M and / or its subcontractors. The Client agrees that any report, conclusions or interpretations will not be construed as a warranty of the subsurface conditions by T&M and / or its subcontractors. The Parties further agree that no warranty or representation, express or implied, is included or intended in any reports, conclusions, or interpretations prepared by or on behalf of T&M pertaining to the site conditions.

9. UNANTICIPATED CONDITIONS.

If during the performance of T&M's services, any unanticipated conditions are observed, which in T&M's judgment may affect the Proposal / Scope of Services, T&M will notify the Client. The Client agrees that the discovery of such unanticipated conditions constitutes a significant change in the Proposal / Scope of Services. Based on T&M's evaluation of unanticipated conditions, T&M is authorized to take any of the following action: (a) Complete the original Scope of Services in accordance with the procedures originally intended in the Proposal; or (b) Stop Work pending written agreement with the Client to modify the Scope of Services and Fees as required by the previously unanticipated conditions; or (c) Terminate the Services effective on the date specified by T&M in writing. The Client shall waive any claim against T&M and agrees to indemnify, defend and hold T&M harmless from any claim of liability for injury or loss arising from the encountering of unanticipated conditions.

10. HAZARDOUS CONDITIONS.

It is acknowledged by both parties that T&M's Scope of Services does not include any services related to asbestos or hazardous or toxic materials. T&M shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to hazardous materials or toxic substances in any form at the Project site. In the event T&M or any other party encounters asbestos or hazardous or toxic materials at the site of the Project, or should it become known in any way that such materials may be present at the site of the Project or any adjacent areas that may affect the performance of T&M Services, T&M may, at its sole option and without liability for consequential or any other damages, suspend performance of Services on the project until the Client takes steps to identify, abate and/or remove the asbestos or hazardous or toxic materials, and to warrant that the site of the Project is in full compliance with applicable laws. If, in T&M's sole opinion, site conditions represent a threat to the public health or an environmental hazard, T&M will so advise the Client, so the Client may notify appropriate authorities. If the Client fails to act in a responsible manner, T&M may notify the appropriate authorities. The Client waives any claim against T&M and agrees to defend, indemnify and save T&M harmless from any claim or liability arising from the conditions or notifications of conditions at the site.

11. FORCE MAJEURE.

T&M is not responsible for delays caused by factors beyond T&M's reasonable control, including, but not limited to,

delays due to strikes, lockouts, work slowdowns or stoppages, accidents, acts of God, failure of any governmental or other regulatory authority to act in a timely manner, failure of the Client or owner of the Project to furnish timely information or to provide review comments promptly; or delays caused by faulty performance by the Client, consultants or contractors at any level.

12. CONSEQUENTIAL DAMAGES.

In no event shall T&M be liable in contract, tort, strict liability or otherwise for any incidental, special, indirect, consequential, punitive or exemplary damages, including but not limited to loss caused by delay, commercial loss, or lost profits or revenues or opportunities resulting from any service furnished by T&M under this Agreement.

13. INSURANCE.

- a. **LIMITS** . T&M shall maintain for the term of this project the following types of insurance and minimum limits: (i) Worker's Compensation and Employer's Liability insurance, per statutory limits; (ii) Comprehensive General Liability Insurance, a total of \$1,000,000 each occurrence and \$2,000,000 in aggregate; (iii) Comprehensive Automobile Liability insurance, a total of \$1,000,000 each occurrence and \$2,000,000 in aggregate; and (iv) Professional Errors and Omissions insurance with a per claim limit of not less than \$3,000,000. Certificates for policies of insurance will be provided to the PROJECT OWNER upon request.
- b. **WAIVER OF SUBROGATION** . Both Parties waive all rights against each other and their respective subconsultants, subcontractors, employees, and agents for any and all damages caused by fire or other causes of loss to the extent covered by insurance set forth herein, except such rights as they may to the proceeds of insurance. The waiver shall be effective as to a person or entity (a) even though that person or entity would otherwise have a duty of indemnification, contractual or other, (b) even though that person or entity did not pay the insurance premium directly or indirectly, or (c) whether or not the person or entity had an insurable interest in the damaged property.

14. INDEMNIFICATION.

T&M agrees, subject to the provisions contained herein, to indemnify the Client, and the Client's officers, directors and employees, from and against any losses, damages and judgments arising from claims by third parties but only to the extent they are found to be caused solely by T&M's negligent acts, errors or omissions in the performance of professional services under this Agreement. T&M's obligation to indemnify and hold harmless the Client and its officers, directors, and employees does not include a duty to defend. This indemnification provision is subject to and limited by the provisions agreed to by the Client and T&M in the "Limitations of Liability" section of these Standard Terms and Conditions.

The Client agrees, subject to the provisions contained herein, to indemnify T&M, and T&M's officers, directors and employees, from and against any losses, damages and judgments caused by the Client's acts, errors or omissions and by any of Client's contractors, subcontractors or consultants or anyone for whom the Client is legally liable.

15. LIMITATION OF LIABILITY.

The Client and T&M agree that T&M's total liability for any and all losses, judgments, injuries, claims, expenses and damages arising out of, resulting from or in any way relating to this Agreement or T&M's Services, shall be limited to T&M's total fee for Services rendered on this Project, **\$\$\$**. The Client hereby releases T&M from any liability above such amount. The Client waives such claims and causes including, but not limited to, negligence, professional errors or omissions, direct or indirect damages, delays, consequential damages, lost profits, strict liability, and breach of contract or breach of warranty.

16. GOVERNING LAW.

The laws of the State within which the Project is located will govern the validity of this Agreement, its interpretation and performance.

17. INDEPENDENT CONTRACTOR.

Unless otherwise provided in our proposal, T&M is and shall be an independent contractor in the performance of services under the Agreement, maintaining complete control of its employees and operations and neither T&M nor anyone employed by T&M shall be the agent, representative, employee or servant of the Client in the performance of services under this Agreement.

18. ASSIGNMENT.

Neither T&M nor the Client shall assign or transfer their interest in the Agreement without the written consent of the other Party. However, nothing contained in this paragraph shall prevent T&M from employing such consultants or subconsultants as T&M may deem appropriate. The covenants and agreements contained herein shall apply to and be binding upon the Parties hereto and upon their respective assigns and successors.

19. WAIVER OF JURY TRIAL.

The Client and T&M specifically waive their rights to a jury trial to resolve any and all claims, including, but not limited to, those sounding in contract, tort or statute, against the other arising out of or connected in any way to this Agreement and Project because the Parties hereto believe that the complex commercial and professional aspects of their dealings with one another make a jury determination neither desirable nor appropriate.

20. DISPUTE RESOLUTION.

The Client and T&M agree that they shall submit any and all unsettled claims, counterclaims or other unresolved disputes to non-binding mediation, where each Party shall pay its own costs and fifty percent (50%) of the mediator's fees. This provision shall not apply to fee collection lawsuits. Any and all claims and / or causes of action between the Parties arising out of or relating to this Agreement may be brought by either Party within eight (8) years of substantial completion of the Project or termination of this Agreement, whichever is sooner.

21. SEVERABILITY.

If any provision contained herein is held to be unenforceable by a court of law or equity, the Agreement shall be construed as if such provision did not exist and the unenforceability of such a provision shall not be held to render any other provision of the Agreement unenforceable.

22. SURVIVAL.

The express representations, indemnification and limitations of liability contained in this Agreement will survive the completion of all services of T&M under this Agreement or the termination of this Agreement for any reason.

23. EXECUTION.

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which, taken together, shall constitute one and the same agreement. Execution and delivery of this Agreement may be evidenced by e-mail or facsimile transmission.

24. ENTIRE AGREEMENT.

This Agreement (*consisting of (1) Proposal / Scope of Services and (2) Standard Terms & Conditions*) comprises the final and complete agreement between the Client and T&M. It supersedes all prior or contemporaneous communications or Agreements, whether oral or written, relating to the subject matter of this Agreement. Execution of this Agreement signifies that each Party has read the document thoroughly, has had the opportunity to have questions explained by independent counsel and accepts the terms and conditions contained herein. Amendments to this Agreement shall not be binding unless made in writing and signed by both the Client and T&M. In the event the Client provides any kind of work authorization whatsoever, verbal or written, for the commencement of T&M's Services or any Additional Services, or any portions thereof, prior to the Client's execution of this Agreement, these terms and conditions, including terms of payment herein, shall govern the Services performed by T&M pursuant to the Project and shall be binding upon the Parties. To the extent the Client provides its own agreement and that agreement is silent with respect to any term or condition expressed herein, these conditions shall prevail and shall be binding upon the Parties. In the event of a conflict between the Standard Terms and Conditions and the Proposal / Scope of Services, the Standard Terms and Conditions will control.



2024 Schedule of Hourly Billing Rates

BILLING TITLE	BILLING RATE/HR	TYPICAL FUNCTIONAL TITLES
TECHNICAL AND FIELD STAFF ENTRY LEVEL	\$110.00	Junior Technician, Junior Landscape
FIELD STAFF - GRADE 1	\$110.00	Technician-1, Inspector-1
TECHNICAL STAFF - GRADE 1, ADMINISTRATIVE SUPPORT STAFF	\$120.00	Technician-1, Graphics Operator, All Clerical / Secretarial / Administrative Support Titles not otherwise classified
FIELD STAFF - GRADE 2	\$120.00	Technician-2 (Survey),Inspector-2
TECHNICAL STAFF - GRADE 2 PROFESSIONAL ENTRY LEVEL	\$125.00	Technician-2, Professional Intern
FIELD STAFF - GRADE 3	\$125.00	Technician-3, Inspector-3
TECHNICAL STAFF GRADE 3	\$135.00	Technician-3, Senior CADD Technician
FIELD STAFF - GRADE 4	\$135.00	Senior Technician (Survey), Senior Inspector
TECHNICAL STAFF - GRADE 4 PROFESSIONAL I	\$145.00	Designer, Senior Engineering Technician, Assistant Engineer, Staff Designer, Planner, Landscape Architect or Environmental Scientist, Graphics Coordinator
FIELD STAFF - GRADE 5	\$155.00	Principal Technician (Survey), Principal Inspector, Party Chief
TECHNICAL STAFF - GRADE 5 PROFESSIONAL II	\$170.00	Senior Designer, Principal Technician, Staff-1 (Designer, Engineer, Planner, Landscape Architect or Environmental Scientist), Information System Support Specialist
PROFESSIONAL III SUPERVISING FIELD STAFF	\$190.00	Staff-2 (Designer, Engineer, Planner, Landscape Architect or Environmental Scientist), Senior Party Chief, Chief Inspector, Supervising Technician
PROFESSIONAL IV SUPERVISING TECHNICAL STAFF	\$210.00	Senior Staff Engineer, Planner, Environmental Planner, Landscape Architect or Scientist, Principal Designer
PROFESSIONAL V (Field and Support)	\$225.00	Principal Surveyor, Supervising Inspector, Accounting Manager, Information System Manager, Computer Design Supervisor
PROFESSIONAL V	\$245.00	Principal (Engineer, Planner, Environmental Planner, Landscape Architect, Staff Designer, Environmental Scientist, Hydrogeologist) Robotic Station Surveyor (including equipment)
SUPERVISING PROFESSIONAL UNIT SUPERVISOR, PROFESSIONAL VI	\$260.00	Supervising (Engineer, Planner, Landscape Architect, Surveyor or Environmental Scientist, Unit Supervisor)
GROUP MANAGER, PROFESSIONAL VII	\$280.00	Group Manager, Assistant Division Manager, Regional Office Manager
PRINCIPAL, MANAGER, PROFESSIONAL VIII, IX	\$315.00	Principal, Division Manager, Corporate Level Manager, Regional Client Service Manager, Senior Consultant, Chief Engineer