



LCA Main Office:
1053 Spruce Road
Wescosville, PA 18106
610-398-2503

Agendas & Minutes Posted:
www.lehighcountyauthority.org

LEHIGH COUNTY AUTHORITY

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BOARD MEETING AGENDA – June 9, 2025 – 12:00 p.m.

In-Person or Virtual Meeting Attendance Options Available: Meetings of the LCA Board of Directors will be held at LCA's Main Office as well as online using the Zoom Meetings application, which includes a telephone option. Public participation is welcomed both in-person or virtually. Instructions for joining the meeting online or by phone are posted on the LCA website in the morning on the day of the meeting, prior to the start of each meeting. You may also issue comment to LCA via email to LCABoard@lehighcountyauthority.org in advance of any meeting or view the meeting at a later time by visiting the LCA website. Please visit <https://www.lehighcountyauthority.org/about/lca-board-meeting-videos/> for specific instructions to join the meeting if you are attending virtually. If attending in-person at LCA's Main Office, please follow all safety and sanitation protocols posted.

1. Call to Order

- **NOTICE OF MEETING RECORDINGS**

Meetings of Lehigh County Authority's Board of Directors that are held at LCA's Main Office at 1053 Spruce Road, Wescosville, PA, may be recorded for viewing online at lehighcountauthority.org. Recordings of LCA meetings are for public convenience and internal use only and are not considered as minutes for the meeting being recorded, nor are they part of the public record. Recordings may be retained or destroyed at LCA's discretion.

- *Public Participation Sign-In Request*

2. Review of Agenda / Executive Sessions

- Additions to Agenda (vote required if action will be taken)

3. Approval of Minutes

- *May 12, 2025 Board Meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *Suburban Water & Wastewater Facilities – SCADA System Upgrade (Approval) (**green**) (digital Board packet, pages 6-14)*

WATER

- *Water Filtration Plant – Redundant Raw Water Line (Approval) (**yellow**) (digital Board packet, pages 15-41)*
- *Allentown Division - 30" & 36" East Side Transmission Main Repair Project (Approval) (**blue**) (digital Board packet, pages 42-47)*

WASTEWATER

- *Kline's Island WWTP - Plastic Media Trickling Filter Rehabilitation (Approval) (**gray**) (digital Board packet, pages 48-69)*

6. Monthly Project Updates / Information Items (1st Board meeting per month) (*digital Board packet, pages 70-78*) – **June 2025 report attached**

7. Monthly Financial Review (2nd Board meeting per month)
8. Monthly System Operations Overview (2nd Board meeting per month)
9. Staff Comments
10. Solicitor's Comments
11. Public Comments / Other Comments
12. Board Member Comments
13. Executive Sessions
14. Adjournment

UPCOMING BOARD MEETINGS		
June 23, 2025	July 14, 2025	July 28, 2025

PUBLIC PARTICIPATION POLICY

In accordance with Authority policy, members of the public shall record their name, address, and discussion item on the sign-in sheet at the start of each meeting; this information shall also be stated when addressing the meeting. During the Public Comment portions of the meeting, members of the public will be allowed 5 minutes to make comments/ask questions regarding non-agenda items, but time may be extended at the discretion of the Chair; comments/questions regarding agenda items may be addressed after the presentation of the agenda item. Members of the public may not request that specific items or language be included in the meeting minutes.

REGULAR MEETING MINUTES

May 12, 2025

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:01 p.m. on Monday, May 12, 2025, Chairman Amir Famili presiding. The meeting was hybrid via in-person and video and audio advanced communication technology ("ACT"), using the Zoom internet application, including telephone option. Each Board member and other attendees of the meeting were able to hear each other attendee and be heard by each other attendee. The public could also participate in the meeting in-person or via ACT, using the Zoom internet application, including telephone option. A Roll Call of Board members present was taken. Amir Famili, Jeff Morgan, Ted Lyons, Linda Rosenfeld, Norma Cusick, Sean Ziller, Marc Grammes and Peter Dent were present for Roll Call and remained for the duration of the meeting. Kevin Baker entered the meeting at 12:07 p.m. and remained for the duration of the meeting.

Attorney Kevin Reid, the Authority's Solicitor, was present along with Authority Staff, Liesel Gross, Ed Klein, Chris Moughan, Andrew Moore, AJ Capuzzi, Charles Volk, Phil DePoe, Susan Sampson and Lisa Miller.

Chairman Famili announced that the Board received their electronic and hard copies of the Board packet in advance. A copy of the packet is also available online.

REVIEW OF AGENDA

Liesel Gross stated there are no changes or additions to the agenda and no executive session is planned.

PUBLIC COMMENTS

None.

APPROVAL OF MINUTES

April 28, 2025 Meeting Minutes

On a motion by Linda Rosenfeld, seconded by Jeff Morgan, the Board approved the minutes from the April 28, 2025 meeting as presented (6-0). Amir Famili and Sean Ziller abstained.

Regional Sewer Capacity & Wet-Weather Planning – Regional Act 537 Plan Preparation

Phil DePoe and Liesel Gross provided background of the project and reviewed a presentation showing updates on the consultant authorizations and next steps. The Kline's Island Sewer System (KISS) faces significant challenges related to aging infrastructure, leaking pipes and manholes, undersized interceptors, and regulatory oversight. These problems result in sanitary sewer overflows during peak wet-weather events and reduced capacity for future growth in the system.

There was some discussion on the relationship between DEP and EPA regulations.

Phil DePoe reviewed the engineering work that has been completed since 2021. He stated that the ongoing challenge is to find the sources of the inflow and infiltration (I&I) into the sewer system. After reviewing the options, the KISS municipalities have agreed on an approach to expand the existing infrastructure at the Kline's Island Wastewater Treatment Plant to handle the wet-weather flows, expand the interceptors to remove bottlenecks, address pretreatment needs with industries directly, and reduce the I&I. DEP has provided guidance that they prefer to see a plan that is focused on I&I removal within a five-year period.

There was some discussion about the feedback provided by DEP and how it has been incorporated into the KISS plan. Liesel Gross discussed the advantages of focusing on the I&I removal first, and the risks associated with how new connections to the system will be addressed. These are topics for further discussion with DEP.

There was additional discussion about how the I&I work will be handled and how municipalities will be held accountable for completing the work on the municipal sewer collection systems. Liesel Gross explained that a new Intermunicipal Agreement will be negotiated to address this issue. Specifically, the KISS municipalities have tentatively agreed to changing the cost-sharing approach for the KISS system to a flow-based billing method, which will help to capture the positive impacts of I&I removal. She also noted that ongoing reporting to DEP is likely to be required, and DEP will be monitoring the success of the program.

Phil DePoe provided a timeline of the KISS plan review and approval process, which should result in submitting the final plan to DEP in October 2025. Liesel Gross added that there is a website, lehighcountysewer.org, dedicated to the project for people to view and comment.

Arcadia WWTP Screening System Project

Chuck Volk provided an overview of the project at the Wastewater Treatment Plant located in Weisenberg Township that serves the Arcadia West Industrial Park, nearby businesses, and a school. The project consists of the installation of two automatic mechanical screening units, one per Sequencing Batch Reactor (SBR), and installed at the head of each SBR tank to remove rags and other bulky debris. The plant currently has no screening system for the raw wastewater.

Marc Grammes asked for details on how the screens will operate. Mr. Volk explained that the screens will be programmed to operate each time there is flow in the force main and will be controlled by the SCADA system.

Jeff Morgan asked what the engineer's estimate was for this project. Mr. Volk stated it was estimated at \$500,000.00.

On a motion by Jeff Morgan, seconded by Sean Ziller, the Board approved the Capital Project Authorization for the Construction Phase in the amount of \$578,787.00 which includes the Construction Contract to Blooming Glen Contractors, Inc. in the amount of \$478,187.00 and the Professional Services Authorization for Construction Phase Services to CHA Engineering in the amount of \$58,100.00 (9-0).

MONTHLY PROJECT UPDATES / INFORMATION ITEMS

Liesel Gross noted that the monthly reports are the only items currently listed for the May 19 agenda, and the meeting may be canceled. The monthly reports will be mailed to the Board. She reviewed projects that will be presented to the Board in June, and noted several project updates provided in the report related to the KISS Act 537 Plan, which are supplemental to the presentation provided on that topic earlier in the meeting.

STAFF COMMENTS

Liesel Gross noted that new authorization forms have been drafted in accordance with the Omnibus Resolution adopted earlier this year. The new forms will begin to be used next month, and the Board is welcome to provide feedback on the forms when they begin to appear in the Board agenda materials. She also noted that last week was National Drinking Water Week and the Lehigh Valley Water Suppliers (LVWS) awarded \$5,000 in scholarships to graduating students who are continuing

their education in a water-related field. LVWS held their signature event, HydroMania, to educate students about water conservation and watershed protection, and she recognized Susan Sampson and the Authority staff for their efforts to coordinate this event. Ms. Gross also noted that Chris Moughan and Susan Sampson will be speaking at the Pa. Section of the American Water Works Association conference next week on the lead service line replacement program and crisis communication.

Chuck Volk introduced Anton Siekmann, the new project manager in the Capital Works department.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

BOARD MEMBER COMMENTS

Linda Rosenfeld asked for an update on the status of the bond consent for funding of Allentown projects. Ed Klein reported that the Authority is still finalizing a solicitation agreement with Goldman Sachs and the language is being finalized. There was further discussion regarding the source of funding for the state revolving fund program.

Amir Famili thanked the Board for providing feedback to him and Jeff Morgan during their outreach efforts to assess the Board's performance and goals.

EXECUTIVE SESSION

None.

ADJOURNMENT

There being no further business, the Vice Chairman adjourned the meeting at 1:14 p.m.

Linda A. Rosenfeld
Secretary

MEMORANDUM

Date: June 9, 2025

To: LCA Board of Directors
From: Christopher Moughan, Director of Service and Technology
Subject: Suburban Water/Wastewater SCADA Upgrade

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization – Amendment – Suburban Water/Wastewater SCADA Upgrade	\$264,500
2	Professional Services Authorization: Keystone Engineering *	\$239,500

** Included in Capital Project Authorization*

PROJECT OVERVIEW:

This project has been focused on upgrading the Supervisory Control and Data Acquisition (SCADA) system for 42 facilities within the Lehigh County Authority (LCA) Suburban Division water and sewer systems. This request is focusing on existing sites that require programming only. The sites have either the required hardware already, or LCA has equipment in inventory that can be used. This final request would complete the LCA Suburban SCADA system, uniting them into a single platform. It has been in process since 2022 and has resulted in a standardized system for all facilities for system management, operational data collection, and alarm protocols for operational events. The project has been phased by priority, determined by LCA staff and Keystone Engineering, considering system issues, SCADA system age, and remote support capabilities. This has increased operational efficiencies and decreased response times.

This is the final request for professional services for the final nine remote facilities included in this project. Additional project details:

- Due to the size of the Suburban Division coverage area, SCADA and real time communication and control are paramount in avoiding issues affecting LCA customers such as boil water advisories. Some of LCA's remote facilities are a 30-40-minute drive away from the Main Office & Operations Center. Therefore, upgrading the SCADA system will allow LCA staff to view and address some issues remotely in a more timely manner.
- Operational Efficiencies Achieved (since 2022)
 - Decreased response time to issues
 - Decreased drive times
 - Reduced vehicle usage
 - Remote access
 - Reduction of boil advisories & improved system compliance
- Other Project Achievements
 - For the past three years Keystone Engineering, OCC and LCA have been working together and are ahead of schedule.
 - The schedule has been modified over the course of the prior three years to make adjustments in priority and system issues.

- All systems that have been migrated to date have standardized layouts, formatting and alarming, making it easier and more efficient for LCA employees to make real-time decisions and decreasing the need for onsite visits.

FINANCIAL:

Funding for this project is included in the 2025-2029 Suburban Division Administration Capital Plan.

PROJECT STATUS:

Phases 1, 2, 3 and 4 are complete. Additional Sites pending Board of Directors approval.

PROFESSIONAL SERVICES – CONSTRUCTION PHASE:

Keystone Engineering will serve as the lead integrator and construction manager for this project. Keystone Engineering has served as LCA’s partner with the system evaluation, and design/build for the remote sites to date.

Keystone Engineering will provide programming and construction management related services for the aforementioned project. Keystone was the design engineering firm that visited and evaluated each of our locations to evaluate current state and provide design specifications for each of the remote stations. They categorized the station into five categories ranging from simple well control to complex development stations to increase programming and build out efficiencies. This final phase, Keystone will provide programming and construction management for this phase.

See the attached proposal for additional details. Keystone’s fixed fee proposal of \$239,500 is in line with pricing for work completed in prior phases.

Professional Services	
1.	Attend monthly PM meetings at LCA or virtually
2.	Design SCADA programs for each of the remaining stations
3.	Assist in management of physical construction of new station equipment.
4.	Continue support of existing stations already completed in this project.
5.	Support LCA through punch list items that arise during final walk-throughs

The Board previously approved the construction contract with OCC in 2022, which remains an active contract with adequate funding authorized to complete the full program.

PROJECT SCHEDULE:

Assuming Board approval of the additional sites at the June 9, 2025 meeting, work is expected to be completed in 2025.

FUTURE AUTHORIZATIONS:

n/a



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610-398-2503 * email: service@lehighcountyauthority.org
www.lehighcountyauthority.org

REQUEST FOR BOARD AUTHORIZATION

Board of Directors Meeting Date: June 9, 2025
Staff Member Requesting Authorization: Christopher Moughan
Department: SCADA
Short Description / Title of Project / Purchase: Suburban Division SCADA Upgrade
Project Number (if applicable): SD-A-1 / MUNIS # ????

Capital Expense: (check all that apply)

- ☒ Capital Project >\$250,000
☐ Construction / Other Contract(s)
☒ Professional Services Authorization
☐ Initial Authorization
☒ Amended Authorization
☐ Professional Services Authorization >\$100,000
☐ Equipment Purchase >\$250,000
☐ Upsizing / Extension >\$250,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

Operations Expense:

- ☐ Construction / Other Contract >\$250,000
☐ Professional Services Authorization >\$100,000
☐ Equipment / Other Individual Item >\$250,000
☐ Emergency Authorization >\$50,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

LCA Enterprise Fund: ☐ Allentown Division ☐ Suburban Water ☐ Suburban Wastewater ☒ Internal Service / Admin

Current Project Phase: ☐ N/A (skip to Description) ☐ Planning ☐ Conceptual Design ☐ Design / Bid ☒ Construction

Prior Authorization(s):

Date	Phase	Description	Amount Authorized
5/9/2022	Design/ Construction	Phase 1 of Suburban Division SCADCA Upgrade	\$3,434,521
2023-2024	Construction	Phases 2 & 3	\$1,358,400
2/24/2025	Construction	Phase 4	\$393,975
Total Prior Authorizations:			\$5,186,896

Current Authorization Requested:

Description	Amount Requested
Staff	\$10,000
Professional Services Authorization: Keystone Engineering Group	\$239,500
Contingency	\$15,000
Total Amount Requested (this authorization):	\$264,500

Future Authorizations:

Phase	Note / Description	Estimated Cost
	N/A – No future phases	\$0
Estimated Total Project Cost:		\$5,451,396

Short Description: (please attach supporting documentation, cost justification, trade-in values, proposals, memos, etc.)

This phase of the Suburban SCADA Upgrade project will incorporate several sites that were excluded from the original package. They were excluded initially due to having recent SCADA hardware upgrades; however, programming work is still required to align them with the remaining SCADA installations in the Suburban Division. This is the final phase of the project and will focus solely on programming.

Professional Services: Keystone Engineering will provide programming and construction management services for the project. Keystone Engineering has served as LCA's partner with the system evaluation, and design/build for all remote sites to date.

See details attached.

Purchasing Procedure: ☐ Formal Bid ☒ Request for Proposal ☐ Cooperative Purchasing Group / CoStars ☐ N/A - Emergency

Motion: _____ **Second:** _____ **Approved?** _____ **Certified by:** _____



April 11, 2025

Mr. George Lill
Lehigh County Authority
1053 Spruce Road
Allentown, PA 18106

RE: Proposal for System Integration Services
Lehigh County Authority
7 Site PLC and HMI Upgrades
Keystone Proposal No. 2025-00122

Dear George,

Keystone Engineering Group, Inc. (Keystone) appreciates the opportunity to present this proposal to Lehigh County Authority (LCA) for the above-mentioned project.

1.0 INTRODUCTION

LCA is looking to upgrade PLC and HMI programming at the following seven sites: Pine Lakes, Arcadia Water, CLD, Kohler, Buss Acres, Spring Creek, Park Pump Station. These sites are currently operational with Schneider M340 PLCs and are polled by the existing iFIX system. As they were not included in the original SCADA upgrade scope, reprogramming is required to align them with LCA's SCADA standards. As part of the integration effort, polling will be transitioned to the Ignition HMI platform, and the existing Operator Interface Terminals (OITs) will be replaced with Panel PCs running Ignition. This ensures the sites are fully incorporated into the upgraded SCADA system moving forward.

2.0 SCOPE OF WORK

This scope includes integrating seven operational sites—Pine Lakes, Arcadia Water, CLD, Kohler, Buss Acres, Spring Creek, and Park Pump Station into the upgraded Ignition-based SCADA system. Each site is currently equipped with a Schneider M340 PLC and is being polled by the legacy iFIX SCADA platform. To bring these sites in line with LCA's current SCADA standards, the PLCs will be reprogrammed as needed, and polling will be transitioned from iFIX to the new Ignition SCADA system. Existing Operator Interface Terminals will be replaced with Panel PCs running Ignition, providing a secure and modern local interface for operations staff. The work will also include collaboration with LCA to develop site-specific functional descriptions, perform system testing and verification, and deliver updated documentation covering PLC logic, HMI configuration, and communication settings. Integration efforts will be closely coordinated with LCA to ensure system-wide consistency, minimal operational disruption, and long-term maintainability.

3.0 PROJECT EXECUTION

3.1 Engineering and Project Management

- Keystone will provide project management and engineering oversight throughout the integration of the seven identified sites
- Up to three site visits to investigate existing conditions and verify functionality.
- Up to six virtual coordination meetings are included for progress tracking.
- Additional meetings, field visits, or coordination sessions can be scheduled upon request or as required for the project needs.
- Keystone will coordinate closely with LCA to maintain alignment with SCADA standards, documentation requirements, and site access protocols.

3.2 Programming

- Keystone will collaborate with LCA to develop site-specific functional descriptions based on existing PLC programs and field operations. These documents will define control logic, alarm handling, setpoints, and HMI functionality, and will be submitted to LCA for review and approval prior to implementation
- Graphical interface screens will be developed to replicate the layout, functionality, and navigation of existing OITs, unless otherwise directed by LCA
- Panel PCs running Ignition will be configured for each site to provide local HMI functionality. This includes:
 - Installation and configuration of Ignition runtime
 - Development of graphical interface screens that replicate the layout, functionality, and navigation of the existing OITs, unless otherwise directed by LCA
 - Configuration of secure user roles and appropriate alarming
- Each site will be configured to communicate with the central Ignition Gateway, allowing polling and supervisory control from the main SCADA system. This will include:
 - Defining and organizing consistent tag structures for each site
 - Creating gateway tags as needed
 - Mapping PLC data to the SCADA HMI screens
 - Alarm configuration and routing consistent with LCA standards
- Final deliverables will include:
 - Updated and archived PLC programs
 - Ignition project files (screens, tags, alarm configuration)
 - Ignition Gateway project configuration for each integrated site
 - Network communication settings and documentation (IP address assignments, protocol mappings)
 - Updated site-specific documentation packages including control narratives, tag lists, and HMI screen layouts
- Up to two days of on-site startup and testing are anticipated per site.
- Keystone will perform site-based commissioning, functional testing, and end-to-end verification for each site in coordination with LCA to ensure successful integration into the upgraded SCADA system.
- Live data communication between remote sites and the central SCADA server will be tested and validated.

3.3 Field Services (ADDER)

- Up to two days of on-site startup and testing are anticipated per site.
- Assist with testing of all signals with Programmer to verify functionality.

4.0 ASSUMPTIONS/EXCLUSIONS

For the purpose of this proposal, we have assumed the following:

- All PLC, Cellular, Panel PC, and other equipment is provided by LCA.
- Ignition licenses will be provided by LCA
- Future equipment is not included in this proposal.
- Items not specifically mentioned in this proposal are excluded.
- Site durations and costs are based on the assumption that existing equipment is accessible and in working order, and that no changes to field wiring are required. Any exceptions will be reviewed with LCA prior to implementation

5.0 BUSINESS CONDITIONS

5.1 Compensation

We propose providing the services indicated above for the following Lump Sum amount:

System Integration Services (Programming Only)	\$215,000
Field Services ADDER	\$ 24,500

This fee is firm and cannot be changed unless both parties agree to changes in the scope. This proposal is valid for 90 days. Invoicing will be done on a monthly percent complete basis.

Additional services beyond the scope of this proposal can be provided based on negotiated lump sum amounts or on a per diem basis

5.2 Project Schedule

Keystone anticipates initiating work on this project in early summer, pending authorization to proceed. The project is expected to require approximately fourteen (14) to twenty-two (22) weeks to complete from the start date.

5.3 Standard Business Condition

Keystone's Standard Business Conditions (attached) apply.

If you should have any questions concerning this proposal, please feel free to contact us. Thank you for the opportunity to submit this proposal.

Respectfully,

Michael Moulla

Michael Moulla
Project Manager

A handwritten signature in blue ink, appearing to read "William F. Bleiler".

William F. Bleiler, PE, LEED AP
President, CEO



AUTHORIZATION TO PROCEED
System Integration Services

Lehigh County Authority
7 Site PLC and HMI Upgrades

I have reviewed Keystone Engineering Group, Inc. Proposal No. 2025-00122, agree to the terms and conditions, and hereby authorize Keystone to proceed with the outlined services.

Date

Authorized Representative for LCA

Name (print or type)

Title (print or type)

Initial for Authorization of Tasks:

System Integration Services (Programming Only)
Field Services ADDER

KEYSTONE ENGINEERING GROUP, INC

GENERAL TERMS & CONDITIONS

1. Proposals are valid for a period of ninety (90) days from the date appearing thereon. After ninety (90) days, the proposal is void and Keystone Engineering Group, Inc. (hereinafter "KEYSTONE") reserves the right to submit a revised proposal.
2. Any and all information contained in the proposal is confidential and proprietary property of KEYSTONE and is not to be disclosed or made available to third parties without the written consent of KEYSTONE.
3. Invoices will be submitted on a monthly basis, unless stated otherwise in writing by KEYSTONE, and are due upon receipt. All balances past due will be charged an interest rate of 1.5% per month past due. KEYSTONE may, after mailing written notice of its intention to do so, suspend services and refuse to release any documents or other work-product until Client has paid in full all amounts due, including interest charges. Client will be responsible for all costs of KEYSTONE in collecting past due balances from Client, including but not limited to, reasonable attorney's fees.

Client must submit, in writing, to KEYSTONE within ten (10) days of the date of any invoice, any dispute on the invoice, otherwise the invoice will be considered to be correct.

4. All documents and/or plans, whether physical or contained on magnetic disk or any other data storage media (hereinafter collectively referred to as "documents"), prepared by KEYSTONE shall be the sole property of KEYSTONE until payment is made in full. Client agrees that if payment is not made in full, Client shall have no proprietary interest in any document prepared by KEYSTONE and KEYSTONE reserves the right to require the return of any document(s) submitted to the Client or others.
5. The proposed fees and schedule constitute KEYSTONE's best estimate of the charges and time required to complete the project. Except as provided in Paragraph 6, the project scope will not be altered without written mutual agreement between KEYSTONE and Client.
6. Fee and schedule commitments will be subject to change for delays caused by Client's failure to provide specified facilities or information, or for delays caused by unpredictable occurrences or force majeure, such as fires, floods, riots, strikes, unavailability of labor and materials, delays or defaults by suppliers of materials or services, process shutdown, acts of God or of the public enemy, or acts or regulations of any governmental agency.
7. Where method of payment is based on time-and-material, the Client agrees that the following will apply:
 - a. The minimum time segment for charging field work is one (1) hour. All field time is charged on a portal to portal basis. The minimum time segment for charging office work is one-half (1/2) hour. Overtime is charged at one hundred fifty percent (150%) of regular rate unless otherwise specifically agreed upon in writing. Overtime is considered any time billed by KEYSTONE employees over 40 hours per week.
 - b. Expenses which are reimbursable include travel and living expenses of personnel when away from the home office on business connected with the project; identifiable communication, reproduction and shipping costs; identifiable drafting and stenographic supplies; expendable materials and supplies purchased specifically for the project. A fifteen (15) percent administrative charge will be added.
 - c. Emergency response rates shall be 2 x Standard Rates and will be applied for services, on-site, or via remote support provided outside the normal working times of weekdays 7:00AM till 6:00PM, Saturday, Sunday, and Holidays.

Where the method of payment is "Lump Sum," Client agrees that the final invoice will be based on the percentage of work completed to the effective date of cancellation, plus an equitable adjustment to provide for costs KEYSTONE incurred for commitments made prior to cancellation.

Where the method of payment is time-and-materials, Client agrees that the final invoice will include all services and direct expenses incurred up to the effective date of cancellation plus an equitable adjustment to provide for costs KEYSTONE incurred for commitments made prior to cancellation.

9. KEYSTONE will maintain, at its own expense, Workman's Compensation insurance, Comprehensive General Liability insurance and Professional Liability insurance and upon request will furnish the Client with a certificate to verify the same.

10. If, subsequent to the execution of an agreement to provide professional services, KEYSTONE finds that specialized equipment must be obtained to perform the services, the Client will be notified of the cost of such equipment and, if agreed, the cost will be added to the project fee as a reimbursable expense or the equipment will be obtained by the Client.
11. Client and KEYSTONE have discussed the risks, rewards and benefits of the project and the total fee for services, and agree that to the fullest extent permitted by law, the total liability, in the aggregate, of KEYSTONE and its officers, directors, employees, agents and independent professional associates and consultants, to the Client and anyone claiming by, through or under the Client for any and all injuries, claims, losses, expenses or damages whatsoever related to KEYSTONE services, including but not limited to the negligence, errors, omissions, strict liability or breach of contract, shall not exceed the total compensation received by KEYSTONE, to date, under this agreement.

A request by the Client to increase the limit of liability must be made to KEYSTONE in writing at the time of the client's acceptance of the proposal. KEYSTONE may agree to increase the limit of liability in consideration of additional payment by the client. The increased limit of liability will become effective upon agreement on the fee and execution of the contract.

12. KEYSTONE warrants that its work will be performed in accordance with generally accepted professional standards. Our services often require decisions which are not based upon exact science, but rather, skilled judgment. We will use that degree of care and skill normally exercised under similar circumstances in the profession at the time the services are rendered. This standard of care shall not be judged according to later standards. **THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED.** This warranty is solely for the benefit of the Client and its successors. It gives no rights to any other third-party beneficiary and KEYSTONE contemplates that there will be no third-party beneficiary of any agreement between KEYSTONE and the Client unless specifically agreed to, in writing, by KEYSTONE.

KEYSTONE does not represent or warrant that any permit or approval will be issued by any governmental body. Should the Client and KEYSTONE agree in this contract that KEYSTONE will be responsible for the preparation of any application for approval or permit, KEYSTONE will endeavor to prepare any application for any such permit or approval in conformance with all applicable requirements, but, in view of the complexity and the frequent changes in applicable rules and regulations and interpretations by the authorities, KEYSTONE cannot guarantee that such application will be complete or will conform to all applicable requirements. Clients desiring further assurance regarding their applications for permits or approvals are advised to obtain legal or other appropriate counsel.

13. The Client agrees to indemnify, defend and hold harmless KEYSTONE and its subcontractors, consultants, agents, officers, directors and employees from and against all losses, claims, damages, expenses or liability whatsoever, whether direct, indirect, economic or consequential, including, but not limited to, reasonable attorney's fees and other costs of defense, arising out of reliance by KEYSTONE on information provided to it by the Client.

KEYSTONE is not responsible for and the Client agrees to indemnify KEYSTONE from any loss, damage, or liability arising from the negligent acts, errors, or omissions of the Client, its staff, employees, agents, consultants, or contractors.

14. This agreement represents the entire agreement between the parties and can only be modified in writing by both parties.
15. This agreement is governed under the laws of the Commonwealth of Pennsylvania.
16. Any provisions of this agreement found upon judicial interpretation or construction to be prohibited by law shall be ineffective to the extent of such prohibition, without invalidating the remaining provisions of this agreement.
17. Neither Client nor KEYSTONE will assign, sublet, or transfer any rights or interest in this agreement without the prior written consent of the other.
18. This agreement contains all of the understandings, promises and undertakings of the parties to it. All prior understandings and agreements, oral or written, previously entered into between the parties to this agreement are merged in this instrument.
19. The parties acknowledge that each has had the opportunity to receive independent legal advice from counsel of his or her own selection, that each is familiar with and fully understands this Agreement and that each has been fully informed as to, and understands, his or her legal rights. Each of the parties further acknowledges and agrees that, after having the opportunity to receive such advice and with such knowledge, and after having read this Agreement carefully and fully, this Agreement is fair, reasonable and equitable, that it is being entered into freely, voluntarily, and in good faith, and that its execution is not the result of any duress, undue influence, coercion, collusion and/or improper or illegal agreement.
20. For purposes of contract interpretation and for the purpose of resolving any ambiguity in this Agreement, the parties agree that this Agreement was prepared jointly by them and/or their respective attorneys.

MEMORANDUM

Date: June 9, 2025

To: Lehigh County Authority Board of Directors
From: Amy Rohrbach, Project Manager
Subject: Allentown Division – Water Filtration Plant – Redundant Raw Water Line Design and Bid Phase Services

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization – Design and Bidding Phase	\$358,894
2	Professional Services Authorization – Verdantas (1), (2)	\$323,894

(1) Included in the Capital Project Authorization

(2) Does not include construction phase related engineering services

PROJECT BACKGROUND

The Water Filtration Plant has experienced reduced flows and increased discharge pressure on the raw water pumps, which indicates a possible obstruction in the raw water pipeline. Efforts to investigate the line have proven difficult because of limited access and obstructions due to bends, valves, and venturi meters. Since this is the only raw water line to service the plant, taking this line out of service is impossible; therefore, a redundant line is being proposed as the existing line is a single point of failure.

A Preliminary Engineering Report was prepared by HDR Engineering, Inc. in January 2025 which recommended renewal of the original 1928 intake from the Little Lehigh Creek intake building to the raw water pumps. A new line from the discharge of the raw water pumps to the sedimentation basins is also recommended. These new lines will allow for full redundancy in the event of a failure in the other line. This will also allow for maintenance of the offline pipe and ensure reliable production of water for the community.

FINANCIAL

This project received conceptual design approval from the City of Allentown on March 26, 2025, and is considered a Major Capital Improvement project; therefore, costs will be recovered in Capital Cost Recovery Charges (CCRC).

CONSULTANT SELECTION PROCESS

Three (3) consulting firms were invited to submit proposals for the Redundant Raw Water Line design and bid phase services. All firms were provided with the January 20, 2025 Preliminary Engineering Report and given the opportunity to tour the WFP and ask questions. The proposals are summarized below:

CONSULTANT	DESIGN COST
CHA	\$358,500
HDR Engineering, Inc.	*
Verdantas (formerly Borton Lawson)	\$323,894

**HDR Engineering, Inc. elected not to participate and did not submit a proposal.*

THIS APPROVAL – PRELIMINARY DESIGN PHASE SERVICES

Verdantas provided the most responsive proposal with a well-defined technical approach at the lowest cost. The Verdantas team has extensive pump station design experience and a proven track record with prior successful projects with LCA including the recent Fluoride System Upgrades design at the WFP, Spring Creek Pump Station, and the High Service Pump VFD upgrades. Verdantas is also currently working on the design of the Lehigh River Pump Station Improvements. The following table summarizes the professional services to be performed under this approval:

Professional Services ⁽¹⁾
1. Survey
2. Environmental Permitting
3. 3D Scan
4. Geotechnical Engineering including Drilling
5. Detailed Design
6. Bidding Services

(1) See Verdantas' proposal dated May 7, 2025, for additional information

PROJECT SCHEDULE

Assuming approval of the Design and Bidding Phase Services at the June 9, 2025 Board meeting, it is anticipated that the work will be ready for bid in Spring of 2026.

FUTURE AUTHORIZATIONS – CONSTRUCTION PHASE

Following Design and Bidding Phase Services, Capital Project Authorization will be requested from the Board for Construction Phase Services. This is anticipated in spring of 2026.



1053 SPRUCE RD * P.O. BOX 3348 * ALLENTOWN, PA 18106-0348
610-398-2503 * email: service@lehighcountyauthority.org
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REQUEST FOR BOARD AUTHORIZATION

Board of Directors Meeting Date: June 9, 2025
Staff Member Requesting Authorization: Amy Rohrbach
Department: Capital Works
Short Description / Title of Project / Purchase: WFP Redundant Raw Water Line Design and Bidding Phase
Project Number (if applicable): AD-W-12 / 50648

Capital Expense: (check all that apply)

- ☐ Capital Project >\$250,000
☐ Construction / Other Contract(s)
☐ Professional Services Authorization
☐ Initial Authorization
☐ Amended Authorization
☒ Professional Services Authorization >\$100,000
☐ Equipment Purchase >\$250,000
☐ Upsizing / Extension >\$250,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

Operations Expense:

- ☐ Construction / Other Contract >\$250,000
☐ Professional Services Authorization >\$100,000
☐ Equipment / Other Individual Item >\$250,000
☐ Emergency Authorization >\$50,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

LCA Enterprise Fund: ☒ Allentown Division ☐ Suburban Water ☐ Suburban Wastewater ☐ Internal Service / Admin

Current Project Phase: ☐ N/A (skip to Description) ☐ Planning ☐ Conceptual Design ☒ Design / Bid ☐ Construction

Prior Authorization(s):

Date	Phase	Description	Amount Authorized
8/21/2024	Planning	Preliminary Engineering Services – HDR Engineering, Inc.	\$35,500
4/4/2025	Planning	Preliminary Engineering Services Amend. 1 – HDR Engineering, Inc.	\$1,500
			\$
Total Prior Authorizations:			\$37,000

Current Authorization Requested:

Description	Amount Requested
Design and Bid Phase Services PSA - Verdantas	\$323,894
Design and Bid Phase Services – Contingency	\$25,000
Design and Bid Phase Services – Staff	\$10,000
	\$
	\$
	\$
	\$
Total Amount Requested (this authorization):	\$358,894

Future Authorizations:

Phase	Note / Description	Estimated Cost
Construction	General Construction Services	\$TBD
Construction	Engineering Services During Construction	\$TBD
Estimated Total Project Cost:		\$TBD

Short Description: (please attach supporting documentation, cost justification, trade-in values, proposals, memos, etc.)

A Preliminary Engineering Report was prepared in January 2025 which recommended renewal of the original 1928 intake from the Little Lehigh Creek intake building to the raw water pumps. A new line from the discharge of the raw water pumps to the sedimentation basins is also recommended. These new lines will allow for full redundancy in the event of a failure in the other line. This will also allow for maintenance of the offline pipe and ensure reliable production of water for the community. This Authorization request is for design and bidding phase services.

Purchasing Procedure: ☐ Formal Bid ☒ Request for Proposal ☐ Cooperative Purchasing Group / CoStars ☐ N/A - Emergency

Motion: _____ Second: _____ Approved? _____ Certified by: _____



Proposal for

Design & Bidding Phase Services Water Filtration Plant - Redundant Raw Water Line

Submitted to



Amy B. Rohrbach, Project Manager
amyrohrbach@lehighcountyauthority.org

May 7, 2025

Submitted by

verdantas

3897 Adler Place, Bldg., C
Bethlehem, PA 18017

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May 7, 2025

Amy Rohrbach

Lehigh County Authority – Allentown Division
1053 Spruce Road, P.O. Box 3348
Allentown, Pennsylvania 18106-0348
amyrohrbach@lehighcountyauthority.org

RE: Water Filtration Plant-Redundant Raw Water Line

Dear Ms. Rohrbach:

Verdantas is pleased to submit for your consideration our Proposal to provide Engineering Services for the Water Filtration Plant-Redundant Raw Water Line project. We understand your need to have a trusted consultant, a partner, to focus and offer a wide range of solutions to your team and are eager to work with you in that capacity. Our in house multi-discipline capabilities and experience working in a 3D environment will be well suited for this project.

Dave Wieller, PE will be the Project Manager and point of contact for the project. Dave has worked with the Authority successfully on the Water Filtration VFD Replacement Project, the Spring Creek Pump Station Upgrade Project, and most recently the Fluoride Room Upgrades project. Dave will be closely assisted by Ryan Minnick, PE who will be responsible for managing the production of the project team.

The enclosed Proposal gives a better look into our proposed team and our capabilities and capacity to service the Authority.

We welcome an opportunity to discuss our qualifications in person as part of your review process.

Please do not hesitate to contact me at 570.881.0253 or via email cmccue@verdantas.com or Dave Wieller at 484-246-6501 and dwieller@verdantas.com should you have any questions.

Sincerely,

Verdantas



Christopher D. McCue, PE

Associate Vice President
570-881-0253
cmccue@verdantas.com

Section 1:

Executive Summary



1. Executive Summary

PROJECT BACKGROUND

The Lehigh County Authority (LCA) is seeking to engage the services of a qualified professional engineering firm to develop plans and specifications for a new redundant raw water line at the Allentown Water Filtration Plant, which will allow full redundancy in the event of a failure in the existing line.

Due to the age of the facility, and the complexity of existing utility systems within the project area, it is critical that accurate existing condition plans be developed in order to optimize the route of the proposed redundant piping systems. The project success will be defined by clearly defining the proposed pipeline routes and understanding all conflicts that need to be managed in design. Once the proposed layouts are fully vetted, detailed design of the new redundant systems can seamlessly be completed.

The following design development activities are critical to setting the tone of delivering quality construction documents:

- ▶ Existing Facility and Campus Mapping/Existing Condition Plans
 - Review of HDR Report to Confirm proposed Project Limits
 - Review of LCA Drawing Inventory
 - Laser Scanning of all building areas impacted by construction
 - Topographic Survey
 - Utility Locating Services (Ground Penetrating Survey (GPR), Electromagnetic Pipe Locator, Traceable Rodder) to Document Existing Utilities
 - 3D BIM Model of Building Areas to be used for Routing/Clash detection
 - 3D Auto Cad Plans/Profiles of Exterior Areas
- ▶ Raw Water Redundant Suction Alignment
 - Inspection/ Open Cut/CFRP Liner Considerations
 - Intake Chamber Isolation/Stop Logs
 - Confirmation of Existing Valving Systems
 - Construction Phasing
 - GP-11 Pre-Application Meeting
- ▶ Raw Water Redundant Discharge Alignment
 - Raw Water Pipe Routing/Impacts in 3D Environment
 - Maintenance Area Routing/Impacts
 - Administration Building Routing/Impacts
 - Parking Lot and Access Routing/Utility Clearances

- Flow Meter Vault
- Interconnect Strategies
- Construction Phasing

PROJECT APPROACH

The following provides a brief summary of the major tasks to be performed:

- ▶ Topographic Survey of Existing Features
- ▶ Utility Location Services
- ▶ 3D Laser Scan of all Building and above Ground Area
- ▶ Creation of 3D Revit Model and 3D Site Plans
- ▶ Discharge and Suction System Routing/Impact Analysis
- ▶ 60% Civil, Mechanical, Structural, Architectural, Electrical Drawings
- ▶ Project Review with Owner/Operations Staff
- ▶ Erosion and Sediment Control Design
- ▶ Coordination with PADEP
- ▶ Wetland delineation and report preparation
- ▶ PADEP GP-11 for presumed water obstruction and encroachment permit
- ▶ 90% Civil, Mechanical, Structural, Architectural, Electrical Drawings
- ▶ Project Review with Owner/Operations Staff
- ▶ Final Design Documents
- ▶ Public Water Supply permit assumed to not be required.

From a bidding perspective, it is assumed all work can be completed under one (1) prime contract.

THE VERDANTAS ADVANTAGE

Verdantas is an established Lehigh Valley multi-discipline firm with an established track record working with LCA. As a whole, Verdantas has approximately 2,000 professionals with a focus on the environment, water, and energy and is ranked #81 on the ENR Top 500 Design Firms for 2025. The Lehigh Valley team has the ability to service LCA locally with our water, civil, mechanical, electrical and structural staff, and can leverage the additional technical resources available throughout Verdantas. Verdantas has all technical resources required to complete this project in-house. The only sub-consultants required will be a utility location specialty firm to assist in locating existing utilities and a 3D modeling firm.

The Verdantas team has extensive experience utilizing 3D technology to develop quality multi-discipline construction deliverables.

Dave Wieller, PE will serve as the project manager and main interface with LCA and will closely be assisted by Ryan Minnick, PE. Dave previously worked with the Authority on the Water Filtration Plant VFD Upgrade Project, Spring Creek Pump Station Upgrade Project, and Fluoride Room Upgrades.

Section 4:

Technical Approach



4. Technical Approach

The following outlines services by design and permitting phase as well as on a discipline level.

TECHNICAL APPROACH BY PROJECT DESIGN PHASE

Project Kickoff to 60% Design

- Develop CPM schedule, to be updated monthly.
- Attend in-person kick-off meeting.
- Conduct utility locating services.
- Conduct field survey.
- Perform 3D laser scanning of interior project areas.
- Develop 3D existing conditions model.
- Identify utility constraints/conflicts and coordinate with LCA personnel.
- Initial coordination with PADEP regarding cofferdam for intake structure maintenance if it is deemed stop log structure requirements improvements.
- Evaluate pipe material selection and develop pros/cons and cost variances.
- Coordinate with LCA regarding the relocation of existing utilities, particularly within the building.
- Review planned sequence of construction and Maintenance of Plant Operations, including discussion regarding access to Administration Building and visitor parking.
- Develop progress plans.
- Submit 60% design plans to LCA for review.
- Develop draft permit application packages.
 - Chapter 105 (PADEP GP-11)
- Attend in-person 60% design review meeting.

90% Design

- Address comments received from 60% design review.
- Develop construction details.
- Develop plans for temporary access to the Administration Building.
- Develop grading plans.
- Complete and submit GP-11 permit application.
- Assist LCA with flood plain coordination required by the City of Allentown.
- Develop substantially complete technical specifications.
- Develop Class 2 Opinion of Probable Cost.
- Develop and submit 60% design plans and technical specifications to LCA for review.
- Attend in-person 90% design review meeting

100% Design

- Incorporate comments and finalize design drawings and technical specifications.
- Modify LCA standard front-end specifications to be project specific.
- Develop an anticipated project schedule
- Submit bid-ready documents to LCA.

TECHNICAL APPROACH BY DISCIPLINE

General

- Use of Procore for all project documentation.
- Detailed design drawings.
- Equipment schedules and details.
- Technical specifications.
- Quality Assurance/Quality Control.
- In-person design review meetings with LCA for 60% and 90% design submissions.
- Potential virtual substantially complete design review meeting with the City of Allentown, if requested.
- In-person Senior Management Performance Review meeting at conclusion of design and bidding phase.
- Assumptions/Exclusions:
 - The current building is code compliant and will remain code compliant.
 - Services necessitated by the enactment or revision of codes, laws, or regulations, including changing or editing previously prepared documents shall be subject to additional services.
 - LCA will assist with Flood Plain coordination.
 - A PADEP Public Water Supply permit will not be required.
 - Services not specifically described/listed herein shall be excluded from our scope/fee and can be added as an additional service should they be required.

Utility Locating Services

- Utility locating equipment to be utilized includes:
 - Underground Scanning GPR Antenna
 - The total effective scan depth can be as much as 8' or more with this antenna depending on soil conditions and composition.
 - Electromagnetic Pipe Locator
 - passively detect the signals from live AC power or radio signals traveling along some conductive utilities.
 - Traceable Rodder
 - This device is pushed through a pipe with direct access, such as a sewer line at a cleanout or a storm drain catch basin.
 - The maximum traceable depth is 10' depending on the soil conditions, and the maximum distance is 200'.
- Assumptions/Exclusions:
 - LCA will provide drawings of existing utilities.
 - The surface needs to be reasonably smooth and unobstructed
 - Obstructions such as curbs, landscaping, and vegetation will limit the efficacy of utility locating.
 - Depths of utilities are estimated.

Survey

- Establish site control on State Plane Coordinate System PA South Zone, NAD 1983 and NAVD 1988.
- Conduct a field survey to existing physical features such as buildings, driveways, fences, sanitary sewer structures, stormwater structures, pole/numbers, water valves, gas valves, inlets, size/type of culverts, overhead wires, signs, edge of shoulder, edge of pavement, centerline of road and curbing.
- Conduct a field survey to locate ground elevations, top/bottom of curb, swales, top/bottom of bank and inverts to prepare 1' topography of site.
- Prepare an AutoCAD drawing showing approximate parcel lines, topography, and existing physical features.
- Incorporate utility locating data into the base plan.
- Assumptions/Exclusions:
 - Bathymetric survey will not be performed.
 - An ALTA/ACSM Land Title Survey, extensive deed research to determine junior/senior rights, survey of municipal boundary lines will not be performed.
 - The surveyor will only locate the above ground utility structures and map the location of underground utilities that are visible from the above ground structures. Utility locating services will be performed by an outside contractor to determine the location of underground utilities not evident during a standard field survey. Field markouts will be completed by the utility locator and located by the surveyor.
 - The client will provide the surveyor with any Title Information, Report, existing utility mapping, etc., that is available for the subject property

3D Laser Scanning and Model Development

- A 3D scan will be completed within the rooms with utility conflicts.
- This scan will be tied to survey grade state plane control.
- Register scans into one (1) complete pointcloud.
- Used registered pointcloud to generate a 350 LOD 3D model in Revit format.
- Deliverables:
 - Leica Truview file and software download for pointcloud viewing purposes.
 - Revit 3D Model – LOD 350.
- Assumptions/Exclusions:
 - Verdantas will have access to the entire scope area.
 - Scans will run continuously without any major interruptions.
 - Equipment within the maintenance room will be moved to the extent practical to facilitate scanning.

Civil

- Based on topographic survey, previous conceptual plan and feedback received from the design team, prepare updated site utility layout.
- Prepare plan and profile for proposed suction and discharge raw water lines in Civil3D.
- Prepare options for site access and temporary parking during construction to maintain



public access to the billing office. Review options with LCA. Incorporate preferred option into civil drawings.

- Prepare existing conditions and demolition plan
- Prepare site utility plan.
- Prepare erosion and sediment control plan.
- Prepare erosion and sediment control plans as necessary for inclusion the Chapter 105 permit related to stream impacts.
- Prepare construction drawings and details for site work.
- Assumptions/Exclusions:
 - The total limit of disturbance will be less than 1 acre and as a result an NPDES permit will not be required.
 - No additional site impervious is proposed and as result stormwater management design is not anticipated.
 - Any relocation of parking during construction will be temporary and restored to existing conditions following construction.
 - Land Development Plan submissions are not included.

Environmental Permitting

- Wetland Delineation / Report
 - A Wetland Scientist (WS) will perform a wetland delineation, identify and clearly mark the boundaries of any wetlands and/or surface water that may be present within the project area.
 - Survey methods will follow those detailed in the Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent Regional Supplement to the Army Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (U.S. Army Corps of Engineers, April 2012).
 - The WS will collect and record pertinent data necessary to document and memorialize the findings of the wetland survey. If wetlands are found within the study area, the WS will incorporate this information in a Wetland Delineation Report. The report will include narrative descriptions of the areas evaluated, background resources reviewed, methodologies followed and survey findings. The reports will also include Site figures, wetland determination data forms; National Wetland Inventory (NWI) maps, soil survey maps and photographic documentation.
 - Deliverables:
 - KMZ, shapefile and AutoCAD file of Wetland data.
 - Wetland Report.
- Chapter 105 Permitting (PADEP GP-11)
 - A General Permit GP-11 (Maintenance, Testing, Repair, Rehabilitation or Replacement of Water Obstructions and Encroachments) is required due to the need for maintenance and rehabilitation of the original intake structure with installation of a coffer dam.

- Coordination with the reviewing agencies (PADEP) to determine all components of the permit applications will be conducted.
 - Verdantas will submit the permit application package through OnBase.
 - Deliverables:
 - GP-11 permit application package submission to DEP.
 - Assumptions / Exclusions:
 - If changes in the permit requirements are identified due to changes to the project design and or coordination with PADEP through the Pre-Application meeting, Verdantas will reassess potential impacts to the permitting tasks.
- Assumptions/Exclusions:
- T&E Species Habitat Studies are not required.
 - Cultural Resource Coordination/Studies is not required.
 - Section 4(f) documentation is not required.
 - Submerged Lands License Agreement (SLLA) is not required.
 - Permit application fees will be paid by LCA.

Mechanical

- Evaluate different pipe materials.
- Design flow meter vault on new raw water discharge line.
- Design plans and details for interior raw water discharge modifications, including piping, valves, and appurtenances.
- Develop routing of suction line of suction and discharge lines.
- Develop Maintenance of Plant Operations.
- Coordination with vendors to specify lining system for the raw water intake line.
- Evaluate and design the following chemical feed systems:
 - Carbon Dioxide
 - Sodium Hydroxide
 - Sodium Hypochlorite
- Assumptions/Exclusions:
 - The existing elbow to be replaced with a tee on the discharge line is of standard size and will not require additional modifications to the existing piping.
 - Sodium hydroxide and sodium hypochlorite will be feed from the existing chemical room.
 - The new CO2 tank will be located exterior to the building near the maintenance entrance.

Electrical

- Design of demolition for electrical cable and raceway impeding new raw water piping pathway.
- Design of relocation of electrical cable and raceway to support new electrical with new raw water routing.
- Coordination and review of existing electrical underground with new raw water routing.

► Assumptions/Exclusions:

- New design to include only electrical to relocation required to accommodate new piping.
- New design of lighting, fire alarm, security, network not included in scope.
- Complete power study and arc flash labeling is not included and can be provided for an additional fee

Structural

- Document existing conditions for intake structure, stair/platform, existing framing system around maintenance room, and penetration locations.
- Stop log design.
- Design of platform extension to existing personnel access to facility. Detail connection points to allow for easy removal after the project is complete.
- Perform preliminary structural evaluation of the existing floor at elevation 22.5 and elevation 33.5 to determine if floors can adequately support proposed piping. Calculations will be limited based on available information including concrete beam size, column locations and existing loading information.
- Perform final design calculations on the existing floor structure and develop hanger/support details to support proposed piping.
- Design and detail of lintel/penetration through the existing CMU wall adjacent to the maintenance shop.
- Design and detail lintel/penetration through existing exterior concrete wall.
- Coordination regarding the supports associated with the existing tanks for the installation of the proposed tee transition couplings.
- Assumptions/Exclusions:
 - Stop logs will be a delegated design and a buyout item to be procured by contractor/LCA.
 - Existing intake structure concrete walls are capable of resisting the anticipated water loading. Based on photographs, minimal repair work for the existing structure.
 - An evaluation of the adjacent crane structure is not included in this scope.
 - Modifications to the existing handrail system is not included in this scope.
 - The platform will be self supporting and will not rely on the existing building to support the anticipated loads. Minimal demolition (to handrail) is included in this scope.
 - Modifications to the existing nearby condensing units is not included in this scope.
 - Accurate drawings of the existing structural system are available for analysis. If drawings, indicating concrete beam reinforcement are not available, Verdantas may subcontract GPR contractor to identify reinforcement as an additional service.
 - The existing structural system is capable of supporting the proposed loading associated with the new discharge pipe. Reinforcement of the existing structural system is not included in this scope.
 - Due to issues with the existing canopy structure, Verdantas proposes to adjust the location of the pipe routing to eliminate undermining the existing foundations for the canopy structure. Therefore, any modifications to the existing canopy structure are excluded from this scope. Verdantas believes this will be a better short term solution as it maintains access to the facility and a better long term solution as it allows for access to the entire pipe without interrupting the canopy structure.

- Adequate drawings are available of the existing exterior concrete walls.
- Verdantas will review the structural drawings of the area of the flocculation tank for coordination. If drawings are not available, isolated excavations may be required to perform this evaluation. These excavations are not included in this scope but may be included as an additional service.
- Design of excavations is not included.

HVAC/Plumbing/Fire Protection

- Identify HVAC components, plumbing, and sprinkler system lines conflicting with the new raw water discharge line.
- Develop relocation plans and details.
- Relocation of the unit heater within the maintenance room.
- Assumptions and Exclusions:
 - Based on discussions during a pre-proposal site visit it was mentioned that the air handling units located within the maintenance room can be demolished and not replaced. It is understood that future modifications will be made to the room.
 - The existing heating system is not being redesigned. Heating modifications within the space is excluded.

Architecture

- Extension of the raw water discharge line may result in the removal of a man-door to the maintenance room. Additional assessment of the space, egress width and existing path is required to ensure proper code compliance.
 - Review use group of the space.
 - Review occupancy load of the maintenance room to determine required egress width.
 - Review emergency exiting path from room to nearest building exit.
 - Present findings of above items.
- Assumptions and Exclusions:
 - Review of the exiting path is from the maintenance room only. Assessment of the entire building code compliance and exiting is not included in the scope of work.
 - Design of alternate egress locations to accommodate the removal of the door is not included in the scope of work.

ANTICIPATED DRAWING LIST

Cover Sheet
Legend, Abbreviations and Symbols
Existing Site Conditions Plan
Raw Water Suction Plan and Profile
Raw Water Discharge Plans and Profiles
Raw Water Main Connection Details
Maintenance of Access Plans
Site Restoration Plans
Erosion and Sediment Control Notes
Erosion and Sediment Control Plans
Erosion and Sediment Control Details
Structural General Notes
Structural Special Inspections
Structural Plan - Stop Logs
Structural Plan - Temporary Stairs and Platform
Structural Plan - Interior Piping Support Plan
Structural Sections
Structural Details
Structural Sections
Mechanical Piping Plans
Meter Vault Plan
Mechanical Piping Details
Chemical Feed Plans
HVAC Demolition and Relocation Plans
Electrical General Notes
Electrical Symbol Legend & Abbreviations
Electrical Relocation Plans
Plumbing/Fire Protection Relocation Plans

Section 5:

Scope of Work



5. Scope of Work

The project is divided into the following two separate components:

- Replacement and rehabilitation of the suction line from the 1928 intake structure to the raw water pumps.
- Installation of the raw water discharge to the sedimentation basins.

Pipe material will be evaluated for each of these improvements.

RAW WATER SUCTION

For replacement and rehabilitation of the suction line, the line will need to be isolated both from the intake and the raw water pumps. There is the potential that the stop log system will require replacement given the age and in the event of the existing valve is inoperable. This will require installation of frames on the intake to accommodate stop log installation. Installation will require a coffer dam. A Chapter 105 (GP-11) permit will be required for this work. A plan will be required to isolate the line from the raw water pumps utilizing existing valves.

The portion of the suction line to be replaced by open-cut methods will be coupled to the existing line exiting the intake house. Numerous existing utilities exist within this area which will require subsurface locating. It is understood that several utilities are abandoned. Of particular concern is the proximity of a brick manhole associated clay drain line. The manhole is in close proximity to the suction line and will need to be protected during construction. Based on existing drawings, it appears that the clay drain line crosses the suction line very close to the top of pipe and may need to be removed and replaced during construction. Subsurface utility investigations will be conducted. No test pits are proposed.

A tee is required for access to the suction line and the installation of the CFRP lining of the remainder of the suction line. An isolation valve will be installed and the new line will transition to the existing line just beyond the new tee. The other entry point for the lining system will be the existing tee located under the steps with the removal of the existing valve.

To maintain personnel access, a temporary stairwell and platform will be designed.

RAW WATER DISCHARGE

Extension of the raw water discharge will require both interior and exterior piping. Interior piping will require replacement of a 90-degree elbow with a tee. It will need to be determined if the existing bend is of standard dimensions or whether additional piping modifications are required for installation of the tee.

Multiple utilities are within conflict of the proposed pipe routing. This includes cable trays, conduits, water lines, fire protection lines, sprinkler lines, steam lines, HVAC ducts and

equipment, and lights. Given the congestion of these features, a 3D scan will be performed and 3D model developed. The 3D model will help discern the extent to which these features are in conflict.

In addition to utility conflicts, two (2) wall penetrations (one interior and one exterior) will be required. There is the potential that the existing door in line with the next piping may be in conflict as well. An assessment of the space, egress width, and existing path is required to ensure proper code compliance. As part of this, review of the use group, occupancy load, and emergency exiting path will be required.

Structural supports will be required due to the length of the span in the maintenance room. This will require a structural analysis.

Based on the current best information, the proposed alignment will cross below a footer for the administration building entry way. The preliminary engineering report noted that an option is to install a steel casing via jack and bore. It is unclear how this would be construction considering access will only be available on one end. As part of the design, alignment alternatives will be reviewed in an effort to not require excavation under the footer. The 3D scan will be tied to survey grade state plan control to tie interior and exterior x, y, and z coordinates.

The open cut section of the discharge line will run parallel to and cross multiple utilities. Subsurface utility investigations will be conducted. No test pits are proposed. Once utilities are located, an alignment will be developed to avoid conflicts to the extent feasible and potential utility relocation will be identified. A new flow meter will be installed within the parking lot for the administration building. The vault will be designed with an access hatch rated for H-20 loading.

Paramount to this project is the development of a Maintenance of Plant Operations Plan along with the sequence of construction maintaining access to the Administration Building.

An access port will be designed with location input from LCA to allow for future inspection and cleaning of the new line. Existing valves on the north and south flocculation basins will be replace, utilizing the existing actuators.

A connection will be designed between the new raw water discharge line and the existing mixed water northwest line. There is the potential of existing buried support piers in the location, which will require structural considerations.

A connection will be designed between the new raw water discharge line and the existing mixed water northeast line.

The addition of the following chemicals will be evaluated and designed.

- Carbon Dioxide

- Sodium Hydroxide
- Sodium Hypochlorite

PROJECT PHASES

The project phases as noted in the RFP are outlined below:

- 60% Design
- 90% (Substantially Complete) Design
- Permitting Assistance
- 100% Design
- Bidding Services

The Scope of Work for design and permitting services is included in Section 4 – Technical Approach.

BIDDING SERVICES

- Post bid documents on PennBid.
- Manage pre-bid meeting and develop minutes
- Response to bidders' question and issue addenda on PennBid.
- Prepare and issue Addenda as appropriate to interpret, clarify or expand upon the Contract Documents and to memorialize all RFI responses.
- Opening and posting of bid results on PennBid.
- Evaluate the bids received for compliance with the bidding requirements.
- Review qualifications and experience data furnished by bidders and contact project references as needed. Review bid bonds, insurance and other information provided for general conformance with Contract Documents.
- Provide recommendation with respect to acceptance of bids and award of construction contracts to LCA along with a copy of the bid tabulation sheets and supplementary information provided by bidders.
- Provide copies of the following to LCA:
 - Electronic copies of all documents posted to PennBid.
 - Electronic copies of addenda posted to PennBid.
 - Summary of bidder's questions.
 - Bid results summary.
 - Award recommendation letter.
- Assumptions/Exclusions:
 - Advertisement for bid will be placed by and paid for by LCA.
 - The project will have one (1) prime contract.
 - LCA will issue Notice of Award, along with a blank agreement, performance and payment bonds to successful Contractors. LCA will review bonds and insurance and coordinate Agreement execution.

- Conformed documents will not be developed.

MEETINGS

The following meetings are required:

- In-person design review meetings with LCA for 60% and 90% design submissions.
- Potential virtual substantially complete design review meeting with the City of Allentown, if requested.
- In-person Senior Management Performance Review meeting at conclusion of design and bidding phase.

Section 6:

Schedule



6. Schedule

PROJECT BACKGROUND

The dates in the following tentative schedule for major milestones of the project.

Week of:	Milestone
June 9, 2025	Design Award
June 23, 2025	Kickoff Meeting with LCA
June 23, 2025	Site Visits
June 30, 2025	Utility Locating/Survey/Scanning
July 14, 2025	3D Base Model Complete
November 3, 2025	60% Design Submission
November 3, 2025	GP-11 Permit Application Submission
February 2, 2026	90% Design Submission
March 2, 2026	Obtain GP-11 Permit
March 16, 2026	Final Design Submission

Schedule is contingent upon the following.

1. Length of time it takes to enter a contract.
2. Equipment vendor coordination/cooperation.
3. LCA review time.
4. PADEP review time.

Verdantas is receptive to working with LCA to develop a mutually agreeable schedule as part of the Design Award, if necessary

Section 7:

Fee Proposal



7. Fee Proposal

Task	Work Hours	Cost
Project Management	80	\$ 17,680
Survey	67	\$ 8,384
3D Scan	47	\$ 6,948
Site Plan/E&S Control	92	\$ 15,132
Environmental Permitting	112	\$ 19,384
Mechanical Design/Plans	320	\$ 53,400
Chemical Feed Design	140	\$ 24,300
Structural Design/Plans	444	\$ 70,464
HVAC, Plumbing, Fire Design/Plans	170	\$ 25,040
Architectural Review	24	\$ 5,664
Electrical Design	244	\$ 39,652
Cost Estimate	44	\$ 9,444
Technical Specifications	56	\$ 9,776
Front End Specifications	12	\$ 2,132
Bid Services	44	\$ 8,864
Reimbursables (billed at cost)		\$ 7,630
TOTALS	1896	\$ 323,894

MEMORANDUM

Date: June 9, 2025

To: LCA Board of Directors

From: Jason Peters, Capital Works Linear Asset Project Manager

Subject: Allentown Water System – 30” and 36” East Side Transmission Main Repair Project – Construction Phase

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization	\$832,320
2 *	Professional Services Authorization – Gannett Fleming	\$120,020
3 *	General Construction Contract – Wexcon Inc.,	\$592,300

**Included in the Capital Project Authorization*

PROJECT OVERVIEW:

The East Side 30” & 36” Water Transmission Main is critical infrastructure that runs from the Water Treatment Plant eastward supplying water to the eastern area of the City of Allentown while maintaining consistent system pressure and fire flows. This repair project is part of LCA’s proactive asset management strategy and is designed to reduce the risk of catastrophic main breaks, service disruptions, and regulatory issues by addressing known vulnerabilities before failure occurs.

In June 2022, the LCA Board authorized a leak detection and condition assessment performed by Pure Technologies. The study was part of LCA’s asset management program and was specifically aimed at identifying weaknesses and active leaks within the East Side 30” & 36” Transmission Mains. The assessment identified six distinct locations where repairs or pipe section replacements were deemed necessary.

Following the completion of the study, the Board approved the design phase of the project in October 2023. The basis of design addresses each of the six leak locations identified, which are distributed along various points of the transmission main. Due to varying pipeline and field conditions, a tailored approach and repair technique was designed at each location for the most cost-effective long-term solution.

FINANCIAL:

This project will be funded by the Allentown Division and is listed in the 2025 Allentown Division capital budget.

PROJECT STATUS:

Construction phase commencement pending Board approval.

THIS APPROVAL - CONSTRUCTION PHASE

BIDDING SUMMARY CONSTRUCTION CONTRACTS:

The project consists of one contract. It was advertised for bid on April 28, 2025 and a mandatory pre-bid meeting was held on May 14, 2025, with nine contractors in attendance. Bids were opened on May 28, 2025. The bidding results are as shown in Table 1 below:

Table 1	
General Construction	
Bidder	Amount
<i>Wexcon, Inc.</i>	<i>\$592,300</i>
Barrasso Excavation, Inc.	\$769,960
Joao & Bradley Construction Co., Inc.	\$819,985
E.K. Services, Inc.	\$965,645
Pact One, LLC	\$1,432,000
Linde Corporation	\$1,768,124

Reference checks for Wexcon, Inc. (Mohrsville PA) have identified no issues. In fact, Wexcon, Inc. successfully completed the Allentown Division New England Street Bridge Watermain Rehabilitation project and is currently contracted with the PA Turnpike Commission for the relocation of the LCA Spring Creek Pump Station sanitary force main along Lower Macungie Road. The bid documents are complete and LCA staff recommend awarding the General Construction contract to Wexcon, Inc., subject to the receipt of the necessary Performance Bonds, Insurance and other required documentation.

PROFESSIONAL SERVICES:

Construction Engineering, Management & Inspection

Gannett Fleming TranSystems Inc., the design engineer of record, will provide construction administration services for the construction phase of the project. The work will generally include:

- Conduct pre-construction conference.
- Review contractor's construction schedule and updates for compliance with project.
- Arrange and conduct monthly progress meetings and provide meeting minutes.
- Review all contractor submittals to ensure that design objectives and requirements of the Contract Documents are met.
- Prepare Change Orders.
- Respond to contractor Requests-for-Information.
- Review certified payrolls.

- Conduct walkover of the project site with contractors and LCA representatives.
- Provide LCA with recommendations on completeness of work, final acceptance and release of final payment.
- Act as the daily field contact person for the project.
- On-site contract management and coordination
- Maintain daily record of project activities, quantities of work performed, site conditions, etc.
- Review monthly pay estimates
- Perform substantial and final completion inspections

PROJECT SCHEDULE:

Pending Board approval, Construction phase is anticipated to begin early August 2025.

FUTURE AUTHORIZATIONS:

N/A



1053 SPRUCE RD * P.O. BOX 3348 * ALLENTOWN, PA 18106-0348
610-398-2503 * email: service@lehighcountyauthority.org
www.lehighcountyauthority.org

REQUEST FOR BOARD AUTHORIZATION

Board of Directors Meeting Date: June 9, 2025
Staff Member Requesting Authorization: Jason Peters, Linear Asset Project Manager
Department: Capital Works
Short Description / Title of Project / Purchase: 30" and 36" East Side Transmission Main Repair Project
Project Number (if applicable): Munis 50587

Capital Expense: (check all that apply)

- ☒ Capital Project >\$250,000
☒ Construction / Other Contract(s)
☒ Professional Services Authorization
☐ Initial Authorization
☐ Amended Authorization
☐ Professional Services Authorization >\$100,000
☐ Equipment Purchase >\$250,000
☐ Upsizing / Extension >\$250,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

Operations Expense:

- ☐ Construction / Other Contract >\$250,000
☐ Professional Services Authorization >\$100,000
☐ Equipment / Other Individual Item >\$250,000
☐ Emergency Authorization >\$50,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

LCA Enterprise Fund: ☒ Allentown Division ☐ Suburban Water ☐ Suburban Wastewater ☐ Internal Service / Admin

Current Project Phase: ☐ N/A (skip to Description) ☐ Planning ☐ Conceptual Design ☐ Design / Bid ☒ Construction

Prior Authorization(s):

Date	Phase	Description	Amount Authorized
6/13/22	Study	Leak Detection Study Phase	\$70,500
8/9/23	Design	Design, Permit and Bid Phase	\$104,300
			\$
Total Prior Authorizations:			\$174,800

Current Authorization Requested:

Construction Phase	Amount Requested
Staff	\$20,000
Construction management and Inspection - Gannett Fleming TranSystems	\$120,020
General Construction contract - Wexcon Inc.,	\$592,300
Contingency	\$100,000
	\$
	\$
	\$
Total Amount Requested (this authorization):	\$832,320

Future Authorizations:

Phase	Note / Description	Estimated Cost
N/A		\$
		\$
Estimated Total Project Cost:		\$1,007,120

Short Description: (please attach supporting documentation, cost justification, trade-in values, proposals, memos, etc.)

The construction phase scope of the 30" and 36" East Side Transmission Main includes all six (6) leak locations identified in the Pure Technologies study report. The locations of these spot repairs or pipe section replacements are found at various locations along the East Side Transmission main and each site will require a specific approach and repair technique. Preventative maintenance of the East Side Transmission Main is critical in order to maintain uninterrupted system-wide service and fire flows throughout the City, by reducing reactive/emergency repairs that result in service interruptions and can lead to boil water notices and regulatory issues.

Purchasing Procedure: ☒ Formal Bid ☐ Request for Proposal ☐ Cooperative Purchasing Group / CoStars ☐ N/A - Emergency

Motion: _____ Second: _____ Approved? _____ Certified by: _____



May 29, 2025

Mr. Jason Peters
Lehigh County Authority

RE: Engineering Services Proposal
 East Side Transmission Repairs
 Construction Services

Dear Jason,

As requested, we are providing this Proposal for construction engineering, full-time observation, and construction administration services for the above referenced project. This effort is a continuation of the design and bid phase services for the 30" and 36" East Side Transmission Main Repairs. As such, services will be performed in accordance with the Terms and Conditions of the design and bid phase services.

SCOPE OF SERVICES

Scope of Services are in accordance with construction phase services for other recent LCA main replacement work.

1. Review contractor submitted bonds and insurances.
2. Coordinate the award process including preparation of notice of intent to award; notice of award; and notice to proceed.
3. Schedule and conduct an in-person Pre-Construction Meeting. Prepare and distribute meeting minutes.
4. Attend up to three (3) monthly job meetings and prepare and distribute meeting minutes.
5. Participate in substantial completion and final completion project walk-throughs.
6. Provide up to forty (40) days onsite for construction observation.
7. Review and provide comment regarding construction schedule submitted by contractor.
8. Maintain electronic logs for submittals, Requests-For-Information (RFIs), and change orders.
9. Maintain project records including emails and correspondence.
10. Review contractor submittals to check that design objectives and requirements of the Contract Documents are met.
11. Respond to design-related requests for information (RFIs) (see qualifiers/assumptions below).
12. Prepare, distribute and execute pay estimates based upon unit price item quantities measured and provided by the GFT CM.
13. Prepare, distribute and execute change orders as agreed, as authorized by LCA.
14. Process final acceptance and release of final payment, as authorized by LCA.
15. Process CAD files of construction record drawings.

The proposed number of meetings has been established based on the estimated construction duration. If construction duration exceeds proposed schedule such that additional meetings are required, Gannett Fleming attendance at such meetings will be at the request and approval of LCA. GFT's attendance at additional meetings will be considered out of scope services and budget will be adjusted, as necessary, based on a time and materials bases according to established hourly rates for the approved meeting attendance.



Proposed Cost Summary

Construction services will be performed on a time and materials basis, with a not to exceed cost. Thus, GFT will invoice LCA for only those services completed in accordance with the noted hourly rates. A summary of proposed not to exceed costs are as follows:

- Construction Engineering: \$31,880
 - Senior Project Manager: 34 hours at \$220 per hour
 - Scientist IV: 120 hours at \$160 per hour
 - Scientist II: 40 hours at \$130 per hour
- Construction Management: \$9,840
 - Construction Manager (Office): 48 hours at \$160 per hour
 - Administrative: 24 hours at \$90 per hour
- Construction Observation: \$78,300
 - Engineer III: 540 hours at \$145 per hour

Please contact me if you have any questions regarding this Proposal. We are thankful for the opportunity to continue our services to LCA and look forward to successfully completing the referenced projects.

Sincerely,

Michael T. Brown, P.E.*

Vice President

* Licensed in PA and NY

E: mtbrown@gftinc.com

C: 717.649.3662

gftinc.com

MEMORANDUM

Date: June 9, 2025

To: Lehigh County Authority Board of Directors
From: Amy Rohrbach, Project Manager
Subject: Allentown Division – KIWWTP Plastic Media Trickling Filter Rehabilitation – Media Procurement

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization – KIWWTP Plastic Media Trickling Filter Rehabilitation – Equipment Purchase	\$2,251,000
2*	COSTARS Purchase – Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co.	\$2,251,000

** Included in Capital Project Authorization.*

PROJECT BACKGROUND

Kline's Island Wastewater Treatment Plant (KIWWTP) contains four 100-foot diameter, 32 feet tall, plastic media trickling filters (PMTFs) that were originally constructed in the 1970s and have been in constant operation since. The PMTFs function by taking the effluent that is pumped up from the primary clarifiers to the top of the tanks where a rotating mechanism distributes the effluent across the plastic media surface and it then trickles through the media where it receives biological treatment from the biomass that builds up on the media surface. The PMTFs have had no extended shutdowns and still contain the original media. The media has reached the end of its useful life and needs to be replaced. LCA has contracted with CHA Consulting Inc. (CHA) to perform and evaluate the PMTFs and determine the necessary repairs. This project has been identified as a near term project in the recently completed KIWWTP Master Plan.

A Conceptual Design submission was submitted to the City of Allentown on April 23, 2025, and Conceptual Design approval was received May 9, 2025. Final design is currently underway with a Substantial Complete design submission to the City expected in mid-June. Bidding is anticipated for late July with bids due in late August and presentation of construction bids to the Board in September. Construction would begin in November and conclude by March 30, 2026, to return the filter to service to allow sufficient development of the biomass film on the new media before the PADEP annual permitted effluent limits change for the season on May 1st.

PMTF #4 will be the first filter to be upgraded and as such, all new media will be installed. Due to PADEP permit requirements for the plant effluent, the project has an accelerated timeline for construction and to effectively meet the schedule, the media must be purchased in advance of the construction contract being awarded.

FINANCIAL

The project received substantially complete design approval from the City on May 9, 2025; therefore, it is considered a Major Capital Improvement (MCI), and costs will be recovered through Capital Cost Recovery Charges (CCRC).

THIS APPROVAL – PLASTIC MEDIA PROCUREMENT VIA COSTARS

Two manufactures were identified with the ability to meet the material and performance specifications as prepared by our design engineer and proposals were solicited from them via the Costars cooperative purchasing program. Both vendors provided pricing, which was received May 29, 2025, the results of which are as follows:

Bidder	Bid
Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co.	\$2,251,000
C.E. Shepherd Company, L.P.	\$2,373,971

CHA Consulting, Inc., LCA's design consultant on this project, and LCA staff have reviewed the proposal documentation provided by both vendors. We have determined that Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co. (Brentwood) is qualified to provide the media for this project. Brentwood has extensive experience providing trickling filter media for tanks of similar size and they have provided media for the KIWWTP. Based on the above, LCA staff recommends the award of a Costars Contract to Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co. based on the pricing provided and the terms as set forth in the specifications.

PROJECT SCHEDULE

Assuming approval of the Plastic Media Procurement at the June 9, 2025 Board meeting, it is anticipated that the material delivery will begin in December 2025 and conclude by January 31, 2026. Liquidated damages will be applied if the January 31, 2026 deadline is not met. This deadline will ensure the contractor's ability to complete the project by March 30, 2026 so the tank can be returned to service and allow sufficient time for the change in effluent limits on May 1st.

FUTURE AUTHORIZATIONS – CONSTRUCTION PHASE

Following Design and Bidding Phase Services, Capital Project Authorization will be requested from the Board for Construction Phase Services. This is anticipated in September 2025.

REQUEST FOR BOARD AUTHORIZATION

Board of Directors Meeting Date: June 9, 2025
Staff Member Requesting Authorization: Amy Rohrbach
Department: Capital Works
Short Description / Title of Project / Purchase: Procurement of Plastic Media for improvements at KIWWTP
Project Number (if applicable): AD-S-24 / 50660

Capital Expense: (check all that apply)

- ☒ Capital Project >\$250,000
☐ Construction / Other Contract(s)
☐ Professional Services Authorization
☒ Initial Authorization
☐ Amended Authorization
☐ Professional Services Authorization >\$100,000
☒ Equipment Purchase >\$250,000
☐ Upsizing / Extension >\$250,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

Operations Expense:

- ☐ Construction / Other Contract >\$250,000
☐ Professional Services Authorization >\$100,000
☐ Equipment / Other Individual Item >\$250,000
☐ Emergency Authorization >\$50,000
☐ Aggregate Change Order >10% of contract and >\$100,000
☐ Stand-Alone Change Order >\$50,000

LCA Enterprise Fund: ☒ Allentown Division ☐ Suburban Water ☐ Suburban Wastewater ☐ Internal Service / Admin

Current Project Phase: ☐ N/A (skip to Description) ☐ Planning ☐ Conceptual Design ☒ Design / Bid ☐ Construction

Prior Authorization(s):

Date	Phase	Description	Amount Authorized
2/5/25	Planning	Preliminary Engineering Services with CHA Consulting, Inc. for KIWWTP Plastic Media Trickling Filter Rehab.	\$50,800
4/15/25	Design/Bid	Design & Bidding Phaser services with CHA Consulting, Inc. for KIWWTP Plastic Media Trickling Filter Rehab	\$65,000
			\$
Total Prior Authorizations:			\$115,800

Current Authorization Requested:

Description	Amount Requested
Costars purchase of plastic media for rehabilitation of PMTF #4 – Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co.	\$2,251,000
	\$
	\$
	\$
Total Amount Requested (this authorization):	\$2,251,000

Future Authorizations:

Phase	Note / Description	Estimated Cost
Construction	Construction contract for repairs to PMTF #4 and installation of new media and associated professional services	\$2,010,000
		\$
Estimated Total Project Cost:		\$4,376,800

Short Description: (please attach supporting documentation, cost justification, trade-in values, proposals, memos, etc.)

Due to a shortened construction window, because of seasonal effluent permit limits, the Plastic Media Trickling Filter (PMTF) can't be taken offline during the spring/summer months. To maintain the schedule, it is recommended that LCA procure the replacement plastic media ahead of the construction contract award. This request is for the authorization of media purchase through Costars. Two quotes were obtained from the two vendors that are available and meet the specifications and award to Brentwood Industries, Inc. c/o Geiger Pump and Equipment Co. is recommended.

Purchasing Procedure: ☐ Formal Bid ☐ Request for Proposal ☒ Cooperative Purchasing Group / CoStars ☐ N/A - Emergency

Motion: _____ **Second:** _____ **Approved?** _____ **Certified by:** _____



ENGINEERED ENVIRONMENTAL SOLUTIONS FOR WATER AND WASTEWATER

Geiger Pump & Equipment Co.
8924 Yellow Brick Rd
Baltimore, MD 21015
Phone: 410.682.2660

May 29, 2025

Lehigh County Authority
1053 Spruce Rd.
Allentown, PA 18106-9408

CHA Consulting Inc.
1 East Broad St., Suite 310
Bethlehem, PA 18018

Reference:

Lehigh County Authority, Allentown Klines Island WWTP
RFP for Plastic Media Trickling Filter Rehabilitation Project

Thank you for the opportunity to provide a COSTARs proposal for the procurement of plastic media for Trickling Filter #4 at the Kline's Island WWTP in Allentown PA. We acknowledge addendum #1 dated 5/27/2025.

Please see attached COSTARs proposal from Geiger Pump and Equipment Company/ Brentwood Industries, Inc. for replacement structural media for Trickling Filter #4.

The existing 100' diameter trickling filters at the Allentown WWTP has American SurfPac Vertical Flow structured media (VF3400) installed in the 1980's. Brentwood Industries, Inc. purchased American SurfPac in April 1994 and has been supporting and producing the VF3400 structured media since that time. Brentwood Industries is the ONLY manufacturer that makes this uniquely rhombus shaped Vertical Flow PVC trickling filter media that the Allentown WWTP has been using with great success for well over 40 years.

In our attached proposal, we are offering "Replacement In Kind" VF3400 media. This is important for the following reasons:

- The unique geometry and surface area should provide the same performance as the current filter. (i.e. Rhombus shaped flute, 27-ft2/ft3)
- Any concerns from the Regulatory Agencies should be alleviated as this is a "Replacement In Kind" and no permits should be required.
- The structural capabilities of this media will meet and /or exceed the currently installed American SurfPac VF3400 media as Brentwood's design and quality control meet or exceed that of American SurfPac's.
- Brentwood's VF3400 media exceeds the specification requirement for 1.25% deflection standard – their offer is a minimum of 1.0%
- Brentwood's PVC material meets ASTM D1784 Classification 12344-B, which is a higher standard than the 12244-B standard in the specification.

Check Out Geiger On-Line! www.geigerinc.com



- Brentwood is the ONLY manufacturer that is ISO 9001:2015 Certified per specifications section 1.4A.5. A copy of their certificate can be provided with their submittal.

In addition to the attached Brentwood proposal, we have included Geiger Pump and Equipment Company's approved COSTARS offered manufacturer list with Brentwood Industries, Inc listed as an offered manufacturer for filtration components.

Please feel free to contact me with any questions with regards to this proposal and we anticipate a successful project together.

Very Truly Yours,

A handwritten signature in black ink, appearing to read "Alan Greve", written over a light blue horizontal line.

Alan Greve
Environmental Sales Engineer
Office: 610-459-1212 ext. 1238
Corporate Office: 410-682-2660
Cell: 610-505-4373
agreve@geigerinc.com
www.geigerinc.com

Geiger Pump and Equipment Co.
COSTARS # 016-E22-257



Contact #	Supplier Name	City	State	Service Area	Product Categories Offered	Manufacturers Offered	Award Date	Expiration Date
016-E22-257	GEIGER PUMP AND EQUIPMENT COMPANY	BALTIMORE	MD	Adams; Allegheny; Berks; Bradford; Bucks; Carbon; Centre; Chester; Clinton; Columbia; Cumberland; Dauphin; Delaware; Franklin; Fulton; Huntingdon; Juniata; Lackawanna; Lancaster; Lebanon; Lehigh; Luzerne; Lycoming; Mercer; Mifflin; Monroe; Montgomery; Montour; Northampton; Northumberland; Perry; Philadelphia; Pike; Potter; Schuylkill; Snyder; Sullivan; Susquehanna; Tioga; Union; Wayne; Wyoming; York	Blowers; Chemical Feed Components and Systems; Distribution System Equipment; Filtration Components; Grinders; Grit Removal Equipment; Pumps; Scrapers; Sludge Presses; Valves	Franklin Electric / Pioneer Pump ; Brentwood Industries; Chemineer (NOV); FKC; Flowserve Limatorque Actuation Systems; Gas Mastrrr; Goulds ITT; ITT/ Fabri-Valve; Jaeger Aeration, LLC; Jim Myers & Sons; John Crane; L & J Technologies - Shand and Jurs Biogas; Moyno (NOV); NEFCO Systems; Newterra, Aeration Industries; Pulsafeeder, Inc.; Ross Valve; Singer Valve; SK Systems; Spencer; Swaby Lobeline; Val-Matic; Verder; WesTech; Whipps, Inc.; Xylem (Goulds Water Technology)	10/18/2022	10/18/2025



BID PROPOSAL #WG00248R3



Brentwood Trickling Filter Proposal

Lehigh County Authority

Kline's Island WWTP Plastic Media Trickling Filter Rehabilitation -
Media Procurement

Bid #50660

CHA Project No. 093585

5/29/2025

5/29/2025

Lehigh County Authority
Kline's Island WWTP Plastic Media Trickling Filter Rehabilitation - Media Procurement
Bid #50660
CHA Project No. 093585

Please see the next page for a summary of our offer. Full details can be found in subsequent pages.

Please note that Brentwood is the only named supplier with ISO-9001 certification and the only one offering PVC media that matches the existing trickling filter media.

Our quotation meets or exceeds the requirements outlined in the specification. Specifically,

1. Our standard PVC material meets ASTM D1784 Classification 12344-B, which is a higher grade than the specified 12244-B. We do not use PVC materials below this standard—this has been our consistent practice for over 40 years across more than 600 trickling filter installations.
2. Our standard for short-term compression deflection is 1%, which exceeds the specified requirement of 1.25%, offering a more stringent strength standard.

Should you have any questions, please do not hesitate to contact us.

Sincerely,



Julia Zhu, Product Line Manager
Julia.Zhu@brentwoodindustries.com
Brentwood Industries

BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****Attention: Lehigh County Authority****Bid Date: 5/29/2025****Bid Time: 3:00 PM****BID PROPOSAL**

Brentwood Industries, Inc proposes to supply all materials and services as an APPROVED manufacturer and in general accordance with the following plans and specifications, subject to the terms and conditions stated herein.

SPECIFICATION SECTION(S):
ADDENDA RECEIVED:**46 53 24**
#1**BRENTWOOD PROPOSES TO FURNISH TRICKLING FILTER EQUIPMENT AS FOLLOWS:**

Number of Filters: 1

Filter Dimensions: 100 ft Diameter
32ft Media depth

Total Media

Volume (ft3) 254,060

ITEMS INCLUDED:**MEDIA SUPPORT SYSTEM**

Pultruded fiberglass (FRP) media support Grating

MEDIA MODULES (PVC)**Media type: Vertical Flow VF3400**

Standard PVC Media Modules with minimum surface area of 27-ft²/ft³ and minimum void ratio of 95%. Modules are 1' or 2' (H) x 2' (W) x 4' or 6' (L) meeting 1.0% deflection standard required by Specification.

PROTECTIVE SURFACE GRATING

AccuGrid 24" X 24" X 1.25" polypropylene interlocking protective surface grating panels covering 100% filter surface area.

TESTING

Per spec. section 3.3.B.g, previous testing reports with similar gauges will be provided. A installation reference list including a min. of 10 installations and with no incident of failure will be submitted.

BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****SCOPE OF SUPPLY NOTES:**

- 1) Volume of media delivered will have a wastage factor for cutting
- 2) Media modules will require field trimming, by others.
- 3) AccuGrid protective surface grating will require field trimming, by others.
- 4) FRP Support Grating will require field cutting by others.

CLARIFICATIONS OR EXCEPTIONS TO SPECIFICATIONS:

- 1) The dimensions, grades, elevations, locations and field measurements or any drawings or specifications issued to Brentwood Industries, Inc. for the purpose of bidding and/or parts design are to be verified by others. All responsibility for field measurements and for verifying the accuracy of all grades, elevations, dimensions, locations, and field measurements are to be performed by others. Any errors due caused by failure to verify all such grades, elevations, dimensions, locations or field measurements shall be promptly rectified by others. This would include price change orders for additional design time, additional material or any other costs associated with the error to Brentwood Industries Inc.



BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****ITEMS SPECIFICALLY NOT INCLUDED AND GENERAL EXCLUSIONS:**

(unless amended herein the following are excluded from our scope of supply).

- 1) Successful contractor shall be responsible for field verification of all dimensions.
- 2) Foundations and/or concrete modifications to accept Brentwood equipment.
- 3) Bid, performance, supply or maintenance bonds.
- 4) Installation of equipment, anchorage, concrete, sealing compounds, anti-seize, shim stock or grout.
- 5) Spare parts, unless listed elsewhere in this proposal.
- 6) Unloading, hauling, erection, weather protection or storage of equipment.
- 7) Removal and disposal of old equipment or excess material or packaging.
- 8) Any component shown or described on a drawing and not shown in the components included section of this proposal, or any component or service not shown in this proposal.
- 9) Field trimming, cutting or other modifications required to properly install the equipment.
- 10) Anchors to secure AccuPier or FRP Pultruded Grating to floor or existing concrete supports

SUBMITTALS:

Shop drawing and submittal preparation in accordance with specification or customer requirements.

OPERATION & MAINTENANCE MANUALS:

Unless otherwise specified, one (1) electronic copy, in Adobe PDF format, of our O&M manual, including the installation & layout drawings, can be downloaded via email or Brentwood's FTP site.

FIELD SERVICE:

The services of a qualified Brentwood field technician are included to assist in the inspection of installed equipment, startup and field testing, certification, and operator training, if required by specification.

Duration is limited to 2 trip(s), for a total of 6 man-day(s)

Additional field services can be provided at the per diem rate, as listed within the rate sheet. Non-use of contractual field service days does not generate a credit on this project. Field service requires a minimum 2 week notice and is based on technician availability. Less notice may be accommodated with additional costs.

BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****TIME AND DELIVERY:**

- 1) Brentwood will furnish initial submittal drawings approximately 6-8 weeks from receipt of a fully executed purchase order and all required structural information including field measurements.
 - 2) Estimated Review: Brentwood assumes a 2 week review and approval period by the consulting engineer.
 - 3) Tentative Shipping Schedule:
 1. The start date of shipping 2-3* trucks per day to be completed by 1/30/2026 would need to begin the week of December 8, 2025.
 2. Raw material must be purchased by June 30, 2025, in order to meet above deadline with our current production schedule.
 3. PO must be received by June 16, 2025, for Brentwood to be able to process the PO and create immediate releases for all raw material purchases in order to meet above schedule.
- *: Estimated to be 83 trucks per tower, with each truck containing 192 media packs for a total of 15,880 media packs required per tower.

FREIGHT:

Freight allowed (best way) to job site. Shipment of media modules will be by common carrier, closed trucks, to minimize damage. All other components will be by flat bed or closed truck, as applicable. Seller is not responsible for delays by the carrier. Modules will be palletized on wooden skids to facilitate handling. Disposal of packaging is the sole responsibility of the buyer. Requests for specific methods of shipment will be at the requestors' expense.

SCHEDULE OF VALUES & PAYMENT TERMS:

- 1) 15% with Notice to Proceed ;
15% with Submittal Approval;
70% on the Furnished of Equipment.
All payments are 100%, net 30 days from invoice date. Payment terms are subject to credit approval.
- 2) Terms are not contingent upon nor in conjunction with any agreement purchaser has with other parties.
- 3) Visit www.brentwoodindustries.com/terms for Brentwood's Water & Wastewater Standard Terms and Conditions of Sale, which are included for reference.

VALIDITY:

This proposal is valid for a period not to exceed 60 days from latest date shown, with project pricing based upon the above shipment schedule. Extensions to delivery timelines may require renegotiation of pricing.

ESCALATION:

Price(s) quoted are subject to adjustment to reflect changes in raw material and/or freight cost(s), should they exceed 3% from the time of quote to the time of delivery. Changes are based on price indexes proved by ChemDataPVC and/or material vendor letter(s), which can be provided upon request. It is understood that it will be Brentwood's option whether to invoke escalation, should the cost(s) exceed this amount.

WARRANTY:

Brentwood warrants its materials to be free of defects in materials or workmanship for a period of sixty (60) months from substantial completion or sixty-six (66) months from date of shipment, whichever shall occur first. Warranty excludes all labor and equipment rental needed to remove and install parts.

BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****BILL AND HOLD:**

If Purchaser fails to take delivery on any scheduled delivery date based on the terms of the executed purchase Agreement, Brentwood reserves the right to reallocate any Product to other projects and reschedule production for the delayed Product. Purchaser will be required to accept any increase in price associated with the repurchase of material to fulfill the purchased Product requirements and the Product Delivery Date will be rescheduled in conjunction with current production schedules.

If the Purchaser requests that Brentwood holds Product in excess of an agreed upon delivery date and Brentwood agrees to hold the Product, Purchaser will provide written notification to Brentwood to store the Product at its facilities for a period of time prior to shipment ("Bill and Hold"). Brentwood will provide written confirmation of the Bill and Hold to Purchaser, including a Statement of Transfer of Title and invoice.

Payment for the Bill and Hold material is due in accordance with the agreed upon terms in the executed purchase Agreement except to the extent dates must be adjusted due to delivery rescheduling, in which case adjusted dates will be shown on the invoice. All payments will be made in accordance with the invoiced payment terms and instructions.

For all Bill and Holds, Purchaser acknowledges that:

- (i) They have made a fixed commitment to purchase the Product.
- (ii) Risk of ownership for the Product passes to Purchaser upon signing Statement of Transfer.
- (iii) Purchaser has requested that the Product be on a Bill and Hold basis for legitimate business purposes.
- (iv) If no delivery date is determined at the time of invoicing and Statement of Transfer and Brentwood does not receive a request for delivery within two (2) months from the Bill and Hold invoice date, Brentwood has the right to release the shipment upon written notice to Purchaser any time following the two (2) month period from Bill and Hold invoice date.

BID PROPOSAL #WG00248R3**KLINE'S ISLAND WWTP TF MEDIA REPLACEMENT -
ALLENTOWN, PA****MANUFACTURER'S REPRESENTATIVE:**

Please direct all questions regarding this proposal to:

Contact: Alan Greve**Company:** Geiger Pump & Equipment Company**Address:** 830 Tryens Road
AstonPA 19014
USA**Phone Number:** 610-505-4373**Email:** agreve@geigerinc.com**PRICING SUMMARY:** **\$2,251,000.00 USD**

Purchase Orders should be made out as follows:

Brentwood Industries, Inc.
c/o Geiger Pump and Equipment Co.
8924 Yellow Brick Rd.
Baltimore MD 21237
PA Costars # 016-E22-257

Brentwood Industries will not be held liable for LD's related to late delivery for items beyond our control.

An example being, contractor delaying scheduled shipments, any such delay will result in a corresponding completion date delay.

Proposal Submitted by:



Julia Zhu, Product Line Manager

Julia.Zhu@brentwoodindustries.com

Brentwood Industries

LIST ATTACHMENTS

- 1 - VF3400 CUT SHEET**
- 2 - ACCUGRID CUT SHEET**
- 3 - FS RATE SHEET**

4 - TERMS AND CONDITIONS

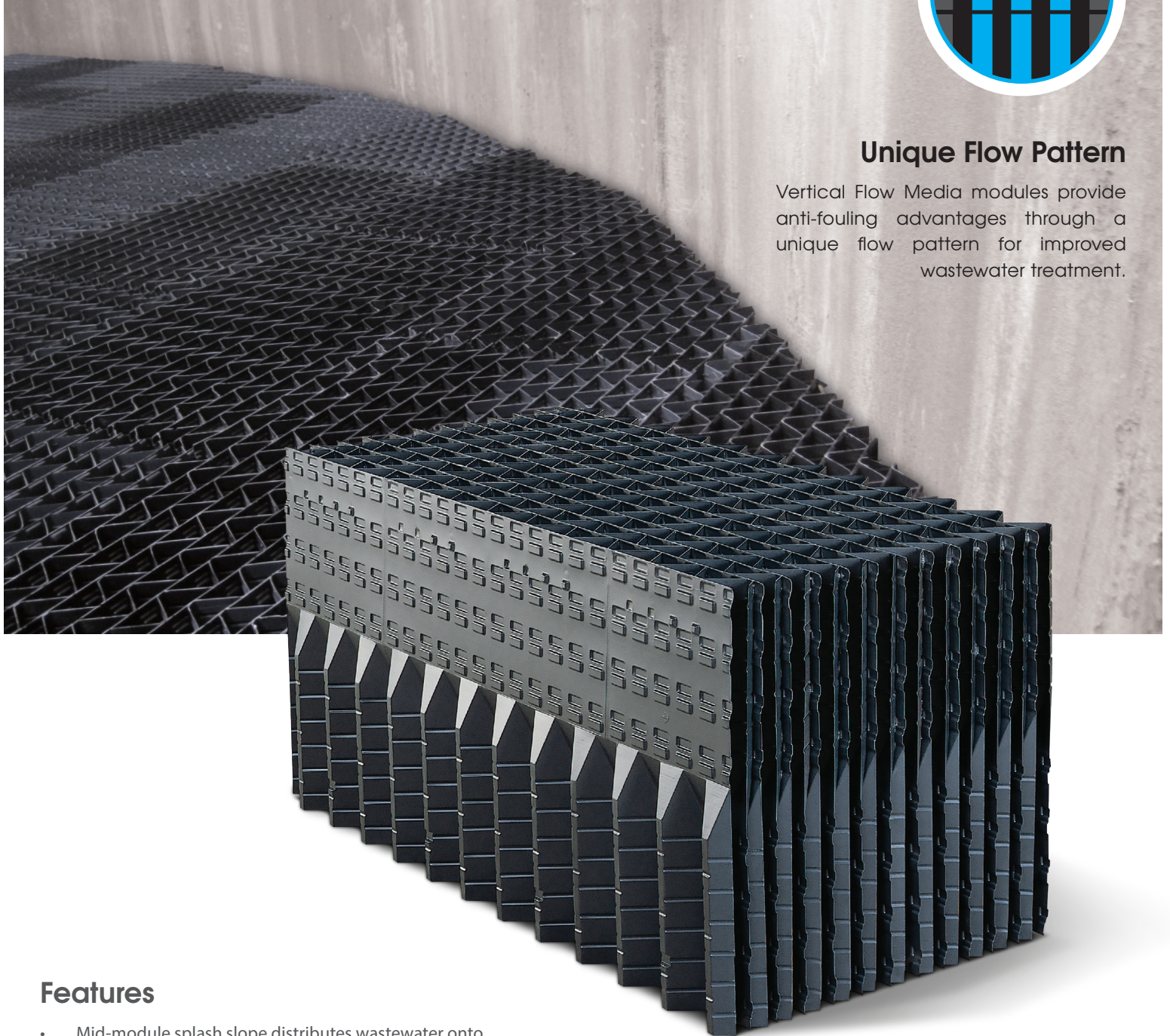


VERTICAL FLOW MEDIA



Unique Flow Pattern

Vertical Flow Media modules provide anti-fouling advantages through a unique flow pattern for improved wastewater treatment.



Features

- Mid-module splash slope distributes wastewater onto biofilm, ensuring improved process performance.
- Media types suited for anaerobic wastewater digestion and high BOD concentrations roughing filters.
- Unique flow pattern improves biofilm sloughing and reduces plugging potential.
- Variety of flute sizes available to accommodate varying process requirements and carbonaceous loadings.



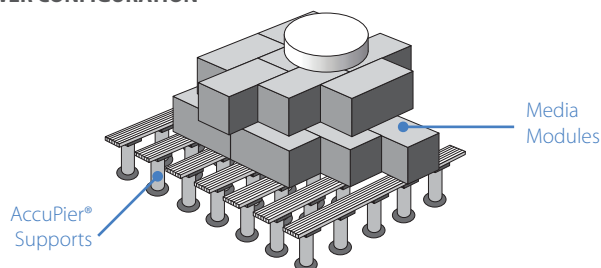
Vertical Flow Media

Brentwood's Vertical Flow Media modules are designed to provide anti-fouling characteristics for biodegradation of municipal and industrial wastewaters. They are used either in roughing trickling filters to reduce energy consumption for BOD treatment, or in anaerobic digesters to reduce reactor size and recover energy. The modules are fabricated from rigid, non-flammable PVC sheets, which are UV-protected and resistant to rot, fungi, bacteria, acids, and alkalis commonly present in municipal wastewater.

SUPERIOR SOLIDS FLUSHING

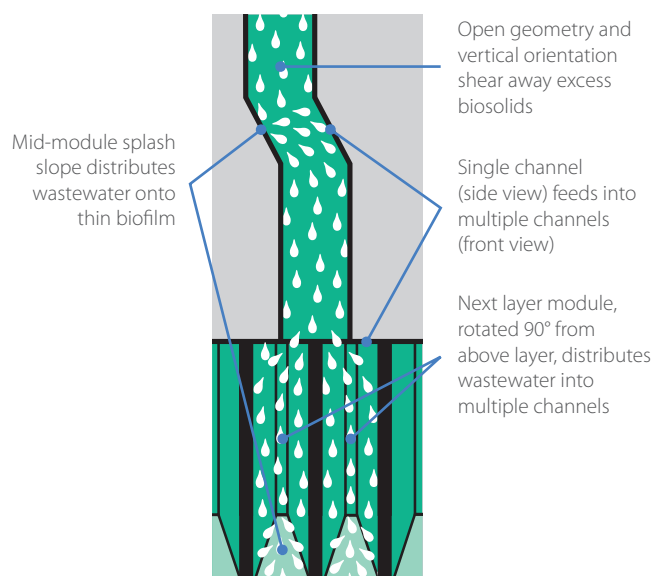
The open geometry and vertical orientation of vertical flow media are designed to shear away excess biosolids, thereby reducing the potential for plugging. Without sharp angles or pockets where excess biomass might accumulate, a thinner biofilm is retained, minimizing loss of effective surface area.

TOWER CONFIGURATION



ENHANCED STRUCTURAL INTEGRITY

Each vertical flow sheet is a combination of flat and corrugated segments, improving the structural integrity of the assembled modules. Brentwood's dedicated glue joints ensure a precise and complete solvent bonding of the sheets for a uniform and homogenous module with superior structural strength. This higher material content per unit of surface area further enhances the module's structural integrity.



VERTICAL FLOW MEDIA PRODUCT DETAILS

PRODUCT	SURFACE AREA	TYPICAL APPLICATIONS
VF-5000	30 ft ² /ft ³ (98 m ² /m ³)	Aerobic BOD roughing filters and anaerobic submerged reactors for high-strength wastewater treatment
VF-3800	42 ft ² /ft ³ (131 m ² /m ³)	Submerged fixed-film/IFAS systems; submerged anoxic systems
VF-3400	27 ft²/ft³ (89 m²/m³)	Aerobic BOD roughing filters and anaerobic submerged reactors for high to very high strength wastewater treatment
VF-3000	60 ft ² /ft ³ (197 m ² /m ³)	Submerged aerobic fixed-film/IFAS systems; submerged anoxic systems
VF-1900	96 ft ² /ft ³ (315 m ² /m ³)	Submerged aerobic nitrification fixed-film systems

Why Brentwood?

Brentwood has the ability to provide products and solutions that offer safe and effective biological treatment, while also addressing your most complex environmental, cost, and treatment concerns. Brentwood's process knowledge, innovative design, manufacturing standards, and product testing yield field-proven systems of the highest quality, recognized worldwide for superior performance and long-lasting service.



BRENTWOOD INDUSTRIES, INC.

brentwoodindustries.com
tricklingfilter@brentw.com
+1.610.374.5109





ACCUGRID® BIO-GRATING

Advanced Protection

AccuGrid protective grating provides a strong, interlocking, non-skid surface on top of trickling filter media.



Features

- Non-skid surface provides safe operator access.
- Interlocking panels ensure that protective layer remains flat in place, covering the entire media surface.
- Durable grid pattern minimizes hydraulic impact on media.
- Self-locking tabs ensure consistent, easy assembly.
- UV-stabilized to inhibit degradation of the grating and to protect the underlying modules from extended sun exposure.



AccuGrid® Bio-Grating

AccuGrid's interlocking panels protect underlying trickling filter media from surface loading, hydraulic impact, and UV degradation. It can be used in rectangular or circular tank configurations and for both retrofit and new construction projects.

EASY INSTALLATION

AccuGrid's innovative design uses one-piece construction of molded-in, self-guiding connections to join the panels. Panels can be cut to size to fit any configuration and do not require edge sealing or any additional hardware, reducing installation time and labor.

STRENGTH

The AccuGrid panels are molded of corrosion-resistant polypropylene for superior strength, maximizing service life for the grating and the media. Additionally, they are capable of supporting foot traffic and provide convenient service walkways.

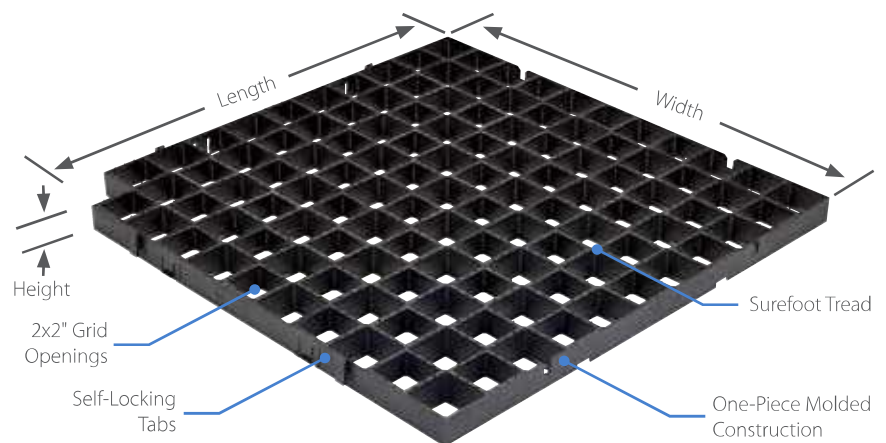


Advantages

- **Cost-effective** alternative to other walkway systems that covers the entire media surface for complete access to the distribution system.
- **Improved safety** by eliminating trip hazards through a surefoot tread design and locking tabs that maintain panel alignment.

AccuGRID PRODUCT DETAILS

Length	24 in (610 mm)
Width	24 in (610 mm)
Height	1.25 in (31 mm)
Grid Openings	2 in x 2 in (50 mm x 50 mm)
Color	Black
Material	Polypropylene
Specific Gravity	0.91
Application	Non-Submerged



Why Brentwood?

Brentwood has the ability to provide you with products and solutions that offer safe and effective biological treatment, while also addressing your most complex environmental, cost, and treatment concerns. Brentwood's innovative design, manufacturing standards, and product testing yield field-proven systems of the highest quality, recognized worldwide for superior performance and long-lasting service.



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FIELD SERVICE RATES

EFFECTIVE
2022 - 2025



DOMESTIC DAILY RATES PER 8 HOUR DAY

SERVICE SPECIALIST	2022	2023	2024	2025
Straight Time	\$1,890.00	\$2,003.00	\$2,123.00	\$2,250.00
OT and Saturday	\$2,827.00	\$2,996.00	\$3,175.00	\$3,365.00
Sunday and Holiday	\$3,780.00	\$4,006.00	\$4,246.00	\$4,500.00

INTERNATIONAL DAILY RATES PER 8 HOUR DAY

SERVICE SPECIALIST	2022	2023	2024	2025
Straight Time	\$2,268.00	\$2,404.00	\$2,548.00	\$2,701.00
OT and Saturday	\$3,402.00	\$3,606.00	\$3,822.00	\$4,051.00
Sunday and Holiday	\$4,538.00	\$4,810.00	\$5,099.00	\$5,404.00

Definition of Labor Rates

Straight time applies to first eight (8) hours worked and traveled Monday through Friday. Any time worked over 8 hours, up to four (4) hours worked and traveled past eight (8) on Monday through Friday, first twelve (12) hours worked on Saturday will be charged at overtime rate. Standby time will be charged at the applicable rate. In case of long-term assignments, Field Service personnel will be rotated at Buyer's expense.

Expenses

Meals, lodging, and incidental expenses will be billed at cost + 15%. Employee travel expenses will be charged at cost +15% for airfare, rental vehicles, taxis and freight. Mileage rate is \$0.95 per mile. Rental of lifting or other special equipment, outside inspection services, additional sub contracted services, etc. will be cost +15%.

Notes:

1. This rate sheet supersedes all previously issued rate sheets.
2. All prices in US dollars.
3. Any "site-specific" training required will be billed as time worked.
4. Customer to furnish water, oils, solvents and will dispose of same. Customer will also furnish power and air, parts, ladders, access to job-site, overhead crane upon request, and all necessary work permits.
5. Rates are "Portal-to-Portal". Travel time, to and from the site, will be considered hours worked and billed at the applicable rate.
6. Stand-by time will be considered hours worked and billed at the applicable rates according to the following:
 - a. Stand-by from home base – 8 hours per day.
 - b. Stand-by while mobilized and in the field – 8 hours per day.
7. A 4-hour minimum will apply to all service work.
8. Rates quoted are subject to adjustment without notice to conform to Seller's published rates in effect at the time service is performed.
9. This offer is subject to Buyer's acceptance of the Conditions above.
10. This offer and any work performed as a result are exclusively governed by our Terms and Conditions attached. Any additional or conflicting terms contained in any document or purchase order issued authorizing work are expressly objected to in advance and shall not apply, except with the express written consent from Brentwood Industries.



BRENTWOOD INDUSTRIES, INC.
brentwoodindustries.com
water@brentw.com





Brentwood Water Group (Water & Wastewater) Standard Terms and Conditions of Sale

Applicability and Acceptance

These terms and conditions of sale ("Terms") are the only terms which govern the sale of product ("Product") by Brentwood Industries, Inc. ("Brentwood") to Purchaser ("Purchaser"). Brentwood and Purchaser together are the "Parties" and each a "Party" herein. Brentwood's accompanying quotation or proposal (collectively "Proposal") and these Terms (collectively this "Agreement"), comprise the entire agreement between the Parties and supersede all understandings, agreements, negotiations, representations, or communications. In the event of a conflict between these Terms and a Proposal, the terms and conditions in the Proposal prevail. Brentwood's commencement of work or service does not constitute acceptance of any Purchase Order. No Purchase Orders will be binding upon Brentwood without express written acceptance by an authorized Brentwood employee. These Terms will be the sole, controlling terms for Purchaser's Purchase Order ("Purchase Order") and no other terms and conditions will apply.

Pricing and Payment:

Payment to be 100% prepayment of goods before shipment unless a credit application has been completed and an extension of credit has been approved. Approved payment terms shall be due in full within thirty (30) days from invoice date. Pricing is in accordance with Brentwood's Proposal. Brentwood reserves the right to adjust the Proposal price at any future time due to raw material and/or labor cost fluctuations greater than +/- 3%.

Shipment and Title:

The shipment terms unless stated otherwise in Brentwood's Proposal will be EXWORKS. Risk of loss and title transfer at Brentwood's facility. Brentwood may, without liability or penalty, make partial shipments of Products to Purchaser.

Inspection and Claims:

Upon delivery of Product, Purchaser must inspect the Product for freight damage and must notify Brentwood in writing within five (5) days after delivery. Furthermore, Purchaser agrees to inspect and accept the Product within a reasonable timeframe. Brentwood may waive claims not made in accordance with the above terms in this section.

Default:

Purchaser's failure to make payment as agreed and according to invoices or Purchaser's failure to perform any of its other obligations under this Agreement constitutes a default. In the event of default, Brentwood will provide written Notice of the default (in accordance with the Notices section of this Agreement) to Purchaser. If Purchaser does not i) correct the default or ii) address how it plans to correct the default in writing to Brentwood within five (5) business days from receipt of Notice of default, Purchaser will remain in default and Brentwood may do any of the following, (i) exercise any and all other rights and remedies of a secured Party under Article 9 of the UCC or applicable law ; (ii) suspend any further Product deliveries or provision of services until Purchaser pays its obligations in full; iii) be excused from any of its performance obligations under this Agreement resulting from Purchaser's delays or inability to complete its obligations; iv) send Purchaser's past due invoice(s) to collections for nonpayment of obligations and report Purchaser's non-payment to appropriate credit agency.

Delays: :

Delays in project schedule beyond the expected ship date not caused by Brentwood which result in additional costs not included in quoted price may be invoiced by Brentwood to Purchaser.

Storage Fees:

Unless otherwise agreed upon by Brentwood and Purchaser, in the event Purchaser notifies Brentwood it cannot take delivery on the agreed upon delivery date on the face of Purchaser's Purchase Order, Brentwood will store the Product free of charge for up to thirty (30) days after the initially agreed delivery date. After the thirtieth (30th) day, Purchaser agrees to pay a monthly storage fee equal to one and one-half (1.5%) percent of the invoice price of the Product. The monthly storage fee will be due in full upon receipt of invoice for the storage fee regardless of whether Purchaser has been invoiced or has paid for the Product.

Termination:

Brentwood or Purchaser may terminate this Agreement if either Party defaults by materially breaching its obligations in this Agreement, provided the breaching Party does not commence correction of the breach within five (5) business days from receipt of written notice of default. The Parties will agree upon a reasonable amount of time to correct the breach. In the event the Party in default fails to correct the breach within the agreed upon time frame, the other Party may terminate the Agreement by providing written notification to the Party in default. In the event of termination, the Purchaser agrees to pay Brentwood cancellation charges in accordance with the table below based on the Purchase Order Value.

Contracted Shipment (weeks)	Elapsed Time – from date of Executed Purchase Order to date of Cancellation (weeks)															
	0 - 2	2.01 - 4	4.01 - 6	6.01 - 8	8.01 - 12	12.01 - 16	16.01 - 20	20.01 - 24	24.01 - 28	28.01 - 32	32.01 - 36	36.01 - 40	40.01 - 44	44.01 - 48	48.01 - 52	52.01 - 56
Up to 8	20	50	75	100												
8.01 - 12	15	40	60	80	100											
12.01 - 16	10	25	45	60	85	100										
16.01 - 20	10	15	25	45	65	85	100									
20.01 - 24	10	10	20	25	50	70	90	100								
24.01 - 28	10	10	15	20	25	50	70	90	100							
28.01 - 32	10	10	10	15	20	35	60	75	90	100						
32.01 - 36	10	10	10	15	20	25	50	60	85	95	100					
36.01 - 40	10	10	10	10	15	25	50	60	70	85	95	100				
40.01 - 44	10	10	10	10	15	25	45	55	65	80	90	95	100			
44.01 - 48	10	10	10	10	15	25	45	55	60	65	80	90	95	100		
48.01 - 52	10	10	10	10	15	20	40	50	55	60	70	85	90	95	100	
52.01 - 56	10	10	10	10	15	20	35	50	55	60	70	80	85	90	95	100

Changes:

Purchase Order changes are subject to Brentwood's written approval, and additional time and charges may apply. Brentwood will not be liable for any delays due to change order requests. Brentwood may make changes to its Product without obligation, apply or manufacture such changes in any Product manufactured prior thereto. Brentwood may make such changes to any ordered Product as does not, in Brentwood's reasonable judgment, interfere with the satisfactory operation of the Product.

Taxes:

All government charges upon the production, shipment or sale of the Product, including, without limitation, sales, use, occupation, export and import taxes, and any other impositions by any government whatsoever, direct or indirect, including those required to be collected by Brentwood, will be paid by Purchaser or, in lieu thereof, Purchaser will furnish Brentwood with an exemption certificate acceptable to the taxing authority. Brentwood reserves and Purchaser disclaims all rights to drawback of duties paid on materials used in the manufacture of the Product. Purchaser will supply Brentwood with proof of exportation and all other documents necessary and otherwise cooperate to obtain payment thereof.

Returns:

No Product may be returned for credit or otherwise unless Purchaser receives Brentwood's authorization. Product authorized for return or credit must be returned in good condition, in its original packaging with completed identification and with all supporting documentation detailing of any claimed defect as required by Brentwood. All shipping and freight charges shall be prepaid by the Purchaser. The returned Product may be subject to a restocking charge of 30%.

**Warranty:**

Brentwood warrants against defects in materials and workmanship. Warranty coverage is contingent on proper storage, installation, use, operation, maintenance, and shutdown procedures, all occurring under ordinary conditions and in compliance with good industry standards, the approved design criteria, Brentwood's approved Submittal and Operation and Maintenance Manual. The Warranty period shall be limited to twelve (12) months from Product shipment. The terms of this Warranty shall be modified only through written agreement by an authorized Brentwood employee. The remedy for a covered defect during the Warranty period shall be limited, at Brentwood's option and control, to repair or replacement of defective Parts and Components, including shipping costs. The remedy excludes costs of labor, removal of non-conforming Products, and expenses related to installation of the replacement Products. THE TERMS OF THIS WARRANTY ARE THE SOLE AND EXCLUSIVE OBLIGATION OF BRENTWOOD TO PURCHASER OR THIRD PARTY FOR CLAIMS RELATED TO THE PRODUCT. UNDER NO CIRCUMSTANCE SHALL BRENTWOOD BE LIABLE TO ANY PERSON OR ENTITY FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES OR ANY OTHER LOSS, COST, OR EXPENSE OTHER THAN SPECIFICALLY STATED IN THIS WARRANTY. OTHER THAN THE EXPRESS LIMITED WARRANTIES MADE HEREIN, BRENTWOOD EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED BY LAW, WITH RESPECT TO ANY SERVICE OR DELIVERABLE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AS WELL AS ANY WARRANTIES WHICH MAY ARISE FROM PRIOR COURSE OF DEALING, CUSTOM, TRADE USAGE, PROVISION OF SAMPLES, PRODUCT LITERATURE OR WEBSITE CONTENT.

Limitation of Liability:

REGARDLESS OF THE FORM OF ACTION, BRENTWOOD'S LIABILITY RELATING TO THE PRODUCT OR THE MANUFACTURE, SHIPPING, SALE OR USE OF THE PRODUCT SHALL NOT EXCEED THE PRICE PAID BY PURCHASER FOR THE SPECIFIC PRODUCT GIVING RISE TO THE CAUSE OF ACTION. BRENTWOOD, ITS AFFILIATES, AND THEIR OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF USE, DOWNTIME, FAILURE TO DETECT ANY FLAW IN ANY SUBJECT MATTER OF ANY TEST, LOSS OF GOODWILL, BUSINESS INTERRUPTION, DELAY IN PERFORMANCE, OR LOST OPPORTUNITIES. REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY OR OTHERWISE IN CONNECTION WITH THE SUPPLY OR SUBSEQUENT USE OR POSSIBILITY OF SUCH DAMAGES.

Indemnification:

Purchaser will at all times indemnify, defend and hold harmless Brentwood, its officers, directors, employees, agents, servants and representatives from and against any and all damages, liabilities, losses, claims, suits, penalties, fines, costs, and expenses, including attorneys' fees (collectively, "Claims") arising directly or indirectly out of or in connection with any (a) infringement or misappropriation of any patent, trademark, or other intellectual property right, including third Party rights, arising from Brentwood's adherence to Purchaser's Specifications; (b) use, operation or possession of Brentwood Product, except to the extent the Claim arises from the gross negligence or willful misconduct of Brentwood; or (c) breach by Purchaser of any provision of any Agreement with or obligation to Brentwood.

Brentwood will at all times indemnify, defend and hold harmless Purchaser from and against loss, injury, damage and liability arising directly in connection with bodily injury death, or destruction of tangible or real property, including loss of use directly resulting from or caused by Brentwood or Brentwood's product, its negligent act, error, omission or for damages arising from Brentwood's gross negligence or willful misconduct in performance of its obligations under this Agreement. Claims and damages are limited to Brentwood's proportionate percentage of negligence and/or fault.

Insurance:

Brentwood will maintain and carry insurance including, but not limited to Commercial General Liability in a sum of \$1,000,000 per occurrence and Workers Compensation in amounts as required by applicable statute. Additional coverages may be available. Upon request, Brentwood will provide to Purchaser a certificate of insurance evidencing its coverages.

Confidential Information:

All non-public, confidential and proprietary information ("Confidential Information"), whether disclosed orally or reduced to writing, whether or not marked or otherwise designated or not identified as such. Confidential Information does not include information which: (i) is or becomes available to the public generally (other than as a result of a disclosure by the Purchaser in violation of this Agreement); (ii) is subject to public disclosure under any federal, state or local law, ordinance or regulation; (iii) becomes available to Purchaser on a non-confidential basis from a source other than Brentwood; or (iv) was known by or was available to Purchaser prior to or at the time Brentwood disclosed it.

Purchaser agrees to protect and safeguard all Confidential Information with at least the same degree of care as the Purchaser would protect its own Confidential Information, but in no event with less than a commercially reasonable degree of care. Purchaser shall hold all Confidential Information in confidence and shall disclose it only to its employees needing to use the Confidential Information for the limited purposes of this Agreement and said employees shall be bound to the confidentiality Terms of this Agreement. No other disclosure of Confidential Information is allowed unless written permission is granted by Brentwood. Purchaser agrees not to use Brentwood's Confidential Information for any purpose other than this Agreement. Purchaser agrees not to use the Confidential Information in any manner to Brentwood's detriment, including without limitation, to reverse engineer, disassemble, analyze, decompile, copy, modify, develop, or design.

Force Majeure:

Brentwood shall not be liable or responsible to Purchaser, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement to the extent Brentwood's failure or delay is caused by or results from a force majeure event, including, acts of God; flood, fire, earthquake, pandemics, disease outbreaks, explosions or other natural disasters; war, invasion, hostilities, terrorist acts, civil unrest; government orders or actions; embargoes or blockades in effect on or after the date of this Agreement; national emergency; strikes, labor stoppages or slowdowns, or other industrial disturbances; shortage of adequate raw materials, labor, power, or transportation facilities; and other similar events beyond the reasonable control of Brentwood.

Brentwood shall give notice within fourteen (14) days of the force majeure event or as soon as reasonably practicable to Brentwood, stating the period of time the occurrence is expected to continue. Brentwood shall use diligent efforts to end the failure or delay and ensure the effects of such are minimized. Brentwood shall resume the performance of its obligations as soon as reasonably practicable after the removal of the cause. In the event Brentwood remains unable to perform its obligations within ten (10) weeks from notice of force majeure event Purchaser may terminate the Agreement.

Governing Law and Jurisdiction:

This Agreement shall be construed under the laws of the Commonwealth of Pennsylvania without reference to conflicts of law principles. The Parties hereby agree that disputes hereunder shall be subject to the exclusive jurisdiction and venue of the courts of Berks County, Pennsylvania, in either the Pennsylvania Court of Common Pleas or the United States District Court for the Eastern District of Pennsylvania. The Purchaser waives any objections based on personal or subject matter jurisdiction or venue.

Export Control:

Purchaser will not use, distribute, transfer, or transmit any Product, components or technical information (even if incorporated into other products) provided in connection with this transaction except in compliance with U.S. export laws and regulations (the "Export Laws"). Purchaser will not, directly or indirectly export or re-export the following items to any country which is in the then-current list of prohibited countries specified in any applicable Export Laws: (a) the Product, components or technical data disclosed or provided to Purchaser by Brentwood; or (b) any improvements or variations of such Product, components or technical data. Purchaser agrees to promptly inform Brentwood in writing of any written authorization issued by the U.S. Department of Commerce office of export licensing to export or re-export any such items referenced in (a) or (b). The obligations stated above in this clause will survive the expiration, cancellation or termination of this Agreement.

Translation:

This document may be translated into one or more languages; however, the English translation shall be the official version and shall prevail over other translations. All dollar amounts are United States currency unless specified otherwise. Purchaser shall abide by the United States Foreign Corrupt Practices Act of 1997, as amended.

Assignment:

Purchaser shall not assign or delegate its obligation hereunder without Brentwood's written consent, and any attempted assignment or delegation without such written consent shall be void.

Waiver:

No waiver by Brentwood of any of the provisions of this Agreement is effective unless explicitly set forth in writing and signed by Brentwood. No failure to exercise, or delay in exercising, any right, remedy, power or privilege arising from this Agreement operates, or may be construed, as a waiver thereof. No single or partial exercise of any right, remedy, power or privilege hereunder precludes any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

Severability:

If any term or provision of this Agreement is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Agreement or invalidate or render unenforceable such term or provision in any other jurisdiction.



Notices:

All notices, requests, consents, claims, demands, waivers and other communications hereunder (each, a "Notice") shall be in writing and addressed to the Parties at the addresses set forth on the face of the Proposal or to such other address that may be designated by the receiving Party in writing. All Notices shall be delivered by personal delivery, nationally recognized overnight courier (with all fees pre-paid or certified or registered mail (in each case, read receipt requested, postage prepaid). Except as otherwise provided in this Agreement, a Notice is effective only (a) upon receipt of the receiving Party, and (b) if the Party giving the Notice has complied with the requirements of this Section.

Authority:

The individual assenting to or executing any documents or orders, whether as a hard copy or, on behalf of Purchaser acknowledges, represents and warrants that he or she has read and understands these Terms and Conditions and has been duly authorized by the Purchaser to execute such on behalf of the Purchaser and bind the Purchaser to these Terms and Conditions.

Relationship of the Parties:

The relationship between the Parties is that of independent contractors. Nothing contained in this Agreement shall be construed as creating any agency, partnership, joint venture or other form of joint enterprise, employment or fiduciary relationship between the Parties, and neither Party shall have authority to contract for or bind the other Party in any manner whatsoever.

Survival:

Provisions of this Agreement which by their nature should apply beyond their terms will remain in force after any termination or expiration of this Agreement.

Amendment and Modification:

This Agreement may only be amended or modified in writing by Brentwood and executed by an authorized representative of each Party.

By signing below both Parties accept Brentwood Water Group (Water and Wastewater) Standard Terms and Conditions of Sale.

BRENTWOOD INDUSTRIES, INC.
By: _____
Print Name: _____
Title: _____
Brentwood Industries, Inc.

PURCHASER
By: _____
Print Name: _____
Title: _____
Company: _____

Lehigh County Authority – Monthly Report to Board of Directors

Upcoming Board Agenda Items & Project Updates – June 2025

Published: June 2, 2025

PART 1 – Upcoming Agenda Items – Action & Discussion Items

FINANCE & ADMINISTRATION

Project Title: Monthly Financial Review

Division / Funding: n/a

Board Action Date: 6/23/2025

Status or Action Desired: Information

Project Phase: n/a

Project Notes: The May 2025 monthly financial report will be presented. Staff Responsibility: Ed Klein

Project Title: 2024 Audit & Financial Statements

Division / Funding: n/a

Board Action Date: 6/23/2025

Status or Action Desired: Acceptance

Project Phase: n/a

Project Notes: The 2024 Audit & Financial Statements are complete and will be presented to the Board for review and acceptance. Staff Responsibility: Ed Klein

Project Title: Resolution No. 6-2025-1 Destruction of Authority Documents

Division / Funding: n/a

Board Action Date: 6/23/2025

Status or Action Desired: Approval

Project Phase: n/a

Project Notes: Board approval is required to allow for destruction of official Authority documents, in accordance with LCA's document retention program and the Pennsylvania Municipal Records Act. Staff Responsibility: Liesel Gross

SYSTEM OPERATIONS

Project Title: Monthly Operations Report

Division / Funding: n/a

Board Action Date: 6/23/2025

Status or Action Desired: Information

Project Phase: n/a

Project Notes: The May 2025 monthly operations report will be presented. Staff Responsibility: Andrew Moore & Chris Moughan

Project Title: Suburban Water & Wastewater Facilities - SCADA System UpgradeDivision / Funding: Suburban DivisionBoard Action Date: 6/9/2025Status or Action Desired: ApprovalProject Phase: Construction Phase

Project Notes: This project is focused on upgrading the Supervisory Control and Data Acquisition (SCADA) system for 42 facilities within the Suburban Division water and sewer systems. The project will be completed over a four-year period, and will result in a standardized system for all facilities for system management, operational data collection, and alarm protocols for operational events. This will increase operational efficiencies and decrease response times. Approval for the capital project authorization, contract award, and professional services necessary to complete the project was granted at the May 9, 2022 Board meeting. The project is ahead of schedule and on budget, and 2025 will be the final phase of the multi-year project. At the February 24, 2025 Board meeting, approval of the planned final phase of consultant services was granted. At the June 9, 2025 meeting, approval for an optional add-on phase will be requested for programming services only. Staff Responsibility: Chris Moughan

WATER PROJECTS – SUBURBAN DIVISION**Project Title: Buss Acres Water System Interconnection & PFAS Remediation**Division / Funding: Suburban DivisionBoard Action Date: 6/23/2025Status or Action Desired: ApprovalProject Phase: Design Phase

Project Notes: In 2024 a study was completed to evaluate options to bring the Buss Acres water system into compliance with the new PFAS regulations. Options included various PFAS removal systems for the existing wells and an option to eliminate the wells and interconnect the Buss Acres system to the Kohler pressure zone of the Central Lehigh Division. While the interconnection option has an initial higher capital cost, the present worth value (over 20 years) shows this alternative to be almost as cost effective as onsite treatment alternatives. The water main extension alternative will be simpler to implement and has a significant annual operating cost savings. Most of the infrastructure installed during the 2019 Buss Acres Pump Station Replacement will continue to be used with this alternative. A request for design phase engineering services will be presented at the 6/23/2025 Board meeting. Staff Responsibility: Amy Kunkel

WATER PROJECTS – ALLENTOWN DIVISION**Project Title: Water Filtration Plant: Redundant Raw Water Line**Division / Funding: Allentown DivisionBoard Action Date: 6/9/2025Status or Action Desired: ApprovalProject Phase: Design Phase

Project Notes: The Water Filtration Plant currently has a single raw water line that brings water from the Little Lehigh Creek to the raw water pumps, and up to the sedimentation basins. In recent years, discharge pressures on the pumps have risen indicating a potential obstruction in the line. Flushing attempts have not improved the issue and attempts to televise the line to identify the issue have been unsuccessful due to limited access. This line presents a single point of failure at the plant and redundancy is being recommended. A preliminary design was completed in January 2025 and identified proposed routing for a new redundant raw water line. A Conceptual Design submission was made to the City for Major Capital Improvement consideration on 1/27/25. The City issued Conceptual Design approval on 3/26/25. Design proposals were received and Capital Project Authorization for Final Design and Bidding Phase services is being requested at the 6/9/2025 Board meeting in order to advance the preliminary design. Staff Responsibility: Amy Rohrbach

Project Title: 30" & 36" East Side Transmission Main Repair ProjectDivision / Funding: Allentown DivisionBoard Action Date: 6/9/2025Status or Action Desired: ApprovalProject Phase: Construction Phase

Project Notes: The LCA Board authorized the 30" and 36" East Side Transmission Main leak detection study phase on 6/13/2022 to identify the condition of this critical asset and determine the need for repairs and or spot replacements. Six leak sites were identified in the study, and repair work must be planned carefully to ensure customers remain in service during the project construction. Design phase authorization was granted at the 10/9/2023 LCA Board meeting. As of April 28, 2025 the project has been placed out to bid via Pennbid. Construction phase approval will be requested at the June 9, 2025 Board meeting. Staff Responsibility: Jason Peters

WASTEWATER PROJECTS – ALLENTOWN DIVISION**Project Title: Kline's Island WWTP - Plastic Media Trickling Filter Rehabilitation**Division / Funding: Allentown DivisionBoard Action Date: 6/9/2025Status or Action Desired: ApprovalProject Phase: Design Phase

Project Notes: The Plastic Media Trickling Filter (PMTF) towers are approximately fifty years old and the media has reached the end of its service life. This project includes a condition assessment of the existing PMTFs and a multi-year rehabilitation effort. Improvements will include concrete structural repairs, removal of existing media and installation of new media, replacement of the exterior panels and all necessary structural and piping improvements. Preliminary engineering for PMTF #4 began February 2025 and a Conceptual Design submission was made to the City of Allentown on 4/23/25. Construction bidding is anticipated for late July with a Notice to Proceed expected by early November. Due to the long lead time on plastic media procurement (6-8 months), it is LCA's desire to prepurchase the media so that the tight construction window can be maintained, and the plant can continue to meet permit limits which are more stringent in the warmer months. Capital Project Authorization for media procurement via the Costars Purchasing Cooperative is being requested at the 6/9/2025 meeting. The construction contract will be bid later in June and Capital Project Authorization for construction phase services is anticipated to be requested in September. Staff Responsibility: Amy Rohrbach

PART 2 – Project Updates – Information Items

Project Title: LCA Munis ERP System Planning & Re-ImplementationDivision / Funding: All DivisionsBoard Action Date: n/aStatus or Action Desired: UpdatedProject Phase: Planning Phase

Project Notes: Within the 2022-2027 Strategic Plan, LCA has identified the need to improve its administrative and financial processes to eliminate paper-based and spreadsheet-based processes, improve reporting accuracy and efficiency, and provide greater opportunity for self-service access for employees and customers. A key component of this initiative is to evaluate the configuration and use of the Enterprise Resource Planning (ERP) system currently in place, Munis, to determine if the system can meet LCA's needs. At the April 11, 2022 Board meeting, approval was granted for a professional services authorization for Raftelis to assist with this evaluation and needs analysis. The needs analysis was completed in July 2022, with a recommendation presented to LCA for several next steps leading to a full re-implementation of Munis. At the September 12, 2022 Board meeting, authorization was granted for Raftelis to move forward with planning tasks, detailed business process review steps, and Munis re-implementation program support. Over the past year, significant additional work has been completed internally, and with Raftelis support, to prepare for this project. A contract with Tyler Technologies for implementation support services for the project to re-implement the Munis system with new modules and integrations, was approved by the Board in October 2023. During 2024 and early 2025, significant team effort was required to fully reconfigure LCA's financial structure, implement new modules for human resources and project accounting, and more. In the weeks ahead, staff will be preparing for a "go live" date of the new implementation on July 1, 2025. Staff Responsibility: Chris Moughan & Brooke Neve

PART 3 – Open Project List – No Updates

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Finance & Administration	LCA Strategic Plan - Progress Reporting	All Divisions	n/a	Liesel Gross
Finance & Administration	Project Management / Construction Management Software Installation & Setup	All Divisions	Planning Phase	Jason Peters
Finance & Administration	Capital Program Management Services	All Divisions	Planning Phase	Chuck Volk
Finance & Administration	LCA Building Optimization Study & Master Plan	All Divisions	Planning Phase	Stephen Boone
Finance & Administration	LCA Main Office Parking Lot Expansion	All Divisions	Project Closeout	Chuck Volk
Finance & Administration	Allentown Water & Sewer Lease Bonds: Bondholder Consent	Allentown Division	n/a	Ed Klein
System Operations	Watershed Monitoring Program	Suburban Division	Planning Phase	Andrew Moore
Water - Suburban	North Whitehall Division - Second Water System Interconnection	Suburban Division	Design Phase	Amy Kunkel
Water - Suburban	Suburban Division Lead Service Line Inventory Program & Compliance Planning	Suburban Division	Planning Phase	Albert Capuzzi
Water - Suburban	2024 Meter Replacements	Suburban Division	Construction Phase	Amy Kunkel
Water - Suburban	Central Lehigh and North Whitehall Systems – Water Supply Study	Suburban Division	Planning Phase	Phil DePoe
Water - Suburban	Upper System Pump Station and Main Extension	Suburban Division	Design Phase	Amy Kunkel
Water - Suburban	Water Main Replacement Program Cycle 8	Suburban Division	Design Phase	Jason Peters
Water - Allentown	Lehigh River Pump Station Upgrades	Allentown Division	Design Phase	Amy Rohrbach

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Water - Allentown	Water Filtration Plant: PFAS Treatment	Allentown Division	Design Phase	Amy Rohrbach
Water - Allentown	Allentown Division Lead Service Line Inventory Program & Compliance Planning	Allentown Division	Planning Phase	Albert Capuzzi
Water - Allentown	Badger Meter Replacements	Allentown Division	Construction Phase	Amy Kunkel
Water - Allentown	Lead Service Line Replacement Project Cycle 2	Allentown Division	Design Phase	Albert Capuzzi
Water - Allentown	Water Filtration Plant: Fluoride System Upgrades	Allentown Division	Design Phase	Amy Rohrbach
Water - Allentown	Water Filtration Plant: HVAC Upgrades - Phase 1	Allentown Division	Construction Phase	Amy Rohrbach
Water - Allentown	Water Filtration Plant: Emergency Power Design	Allentown Division	Design Phase	Amy Rohrbach
Water - Allentown	Water Main Replacement Program Cycles 9 - 11	Allentown Division	Design Phase	Jason Peters
Water - Allentown	Water Filtration Plant: Filter Upgrade Project	Allentown Division	Construction Phase	Amy Rohrbach
Water - Allentown	Lead Service Line Replacement Project Cycle 1	Allentown Division	Construction Phase	Reni Keane-Dengel
Water - Allentown	Large Diameter Valve Rehabilitation & Replacement Program	Allentown Division	Construction Phase	Chuck Volk
Sewer - Act 537	Sanitary Sewer Collection System: City of Allentown Manhole Inspections	Allentown Division	Planning Phase	Phil DePoe
Sewer - Act 537	Sanitary Sewer Collection System: City of Allentown Manhole Rehabilitation	Allentown Division	Construction Phase	Jason Peters
Sewer - Act 537	KISS System Modeling - Sewage Billing Meter QA/QC Data Analytics and 2021 Flow Metering Preparation	City of Allentown (AO)	Planning Phase	Phil DePoe
Sewer - Act 537	KISS Act 537 Planning - Selection of Solution (SOS) Phase	City of Allentown (AO)	Project Closeout	Phil DePoe
Sewer - Act 537	Regional Sewer Capacity & Wet-Weather Planning - Regional Act 537 Plan Preparation	City of Allentown (AO)	Planning Phase	Phil DePoe

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Sewer - Act 537	KISS Act 537 Planning - Financial & Institutional Evaluation, Phase 3	City of Allentown (AO)	Planning Phase	Liesel Gross
Sewer - Act 537	Legal Services: Development of New Intermunicipal Agreement(s)	City of Allentown (AO)	Planning Phase	Liesel Gross
Sewer - Act 537	KISS Relief Interceptor Pre-Design Study	Suburban Division	Planning Phase	Phil DePoe
Sewer - Act 537	Regional Sewer Capacity & Wet-Weather Planning: Engineering & Program Support	Suburban Division	Planning Phase	Phil DePoe
Sewer - Act 537	Western Lehigh Interceptor Municipalities Test & Seal Lateral Grouting Project, Year 2 (2025)	Suburban Division	Construction Phase	Jason Peters
Sewer - Act 537	Industrial Pretreatment Plant Master Plan	Suburban Division	Planning Phase	Liesel Gross & Albert Capuzzi
Sewer - Act 537	Western Lehigh Service Area - Engineering & Program Support	Suburban Division	Planning Phase	Phil DePoe
Sewer - Act 537	Western Lehigh Interceptor Municipalities Test & Seal Lateral Grouting Project	Suburban Division	Construction Phase	Jason Peters
Sewer - Act 537	Upper Western Lehigh Pump Station & Force Main	Suburban Division	Construction Phase	Amy Kunkel
Sewer - Suburban	Park Pump Station Phase 2 Upgrade	Suburban Division	Construction Phase	Amy Kunkel
Sewer - Suburban	Spring Creek Force Main Relocation - PA Turnpike Commission	Suburban Division	Construction Phase	Amy Kunkel
Sewer - Suburban	North Whitehall Township Act 537 Plan	Suburban Division	Planning Phase	Phil DePoe
Sewer - Suburban	Arcadia WWTP Screening System Project	Suburban Division	Construction Phase	Chuck Volk
Sewer - Suburban	LCA Meter Stations 1 and 2 Upgrades	Suburban Division	Construction Phase	Chuck Volk
Sewer - Suburban	Wynnewood Terrace WWTP Expansion - Developer Cost-Sharing Agreement	Suburban Division	Design Phase	Chuck Volk
Sewer - Suburban	Heidelberg Heights Sanitary Sewer Consent Order & Agreement	Suburban Division	Planning Phase	Chuck Volk

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Sewer-Suburban	Pretreatment Plant - Critical Upgrades	Suburban Division	Construction Phase	Chuck Volk
Sewer - Suburban	Lynn Township WWTP Final Clarifier Project	Suburban Division	Construction Phase	Chuck Volk
Sewer - Suburban	Spring Creek Pump Station Upgrades	Suburban Division	Construction Phase	Amy Kunkel
Sewer - Suburban	Pretreatment Plant (PTP) Electrical Study	Suburban Division	Planning Phase	Chuck Volk
Sewer - Suburban	Lynn Township Corrective Action Plan	Suburban Division	Planning Phase	Jason Peters
Sewer - Suburban	Sand Spring WWTP: Treatment Process Modification	Suburban Division	Construction Phase	Chuck Volk
Sewer - Allentown	Sanitary Sewer Collection System: I&I Source Reduction Program (LCA Year 2)	Allentown Division	Planning Phase	Jason Peters
Sewer - Allentown	Kline's Island WWTP: Chemically Enhanced Primary Treatment Study	Allentown Division	Planning Phase	Stephen Boone
Sewer-Allentown	Kline's Island WWTP - Wet Weather Improvements - Phase 1	Allentown Division	Design Phase	Amy Rohrbach
Sewer - Allentown	Kline's Island WWTP - Septage Receiving and Vacuum Truck Unloading Modifications	Allentown Division	Construction Phase	Amy Rohrbach
Sewer - Allentown	Kline's Island WWTP: Substation No. 1 and Switchgear Replacement	Allentown Division	Construction Phase	Amy Rohrbach
Sewer - Allentown	Kline's Island WWTP: Solids Process Boiler and HVAC System Upgrade Project	Allentown Division	Construction Phase	Amy Rohrbach
Sewer - Allentown	Allentown Division I&I Program – Programmatic Support, Trout Creek & Eastside Basins	Allentown Division	Planning Phase	Stephen Boone
Sewer - Allentown	Kline's Island WWTP: 2025 Architectural and Structural Upgrades	Allentown Division	Construction Phase	Amy Rohrbach
Sewer-Allentown	Kline's Island WWTP - Primary Sludge System Upgrades	Allentown Division	Construction Phase	Amy Rohrbach
Sewer - Allentown	Kline's Island WWTP - Final Settling Tanks 1-4 Upgrades	Allentown Division	Construction Phase	Amy Rohrbach

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Sewer - Allentown	Sanitary Sewer Collection System: I&I Source Reduction Program (LCA Year 1)	Allentown Division	Construction Phase	Jason Peters