LCA Main Office:
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Agendas & Minutes Posted:
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LEHIGH COUNTY AUTHORITY

Published: May 1, 2023

BOARD MEETING AGENDA – May 8, 2023 – 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 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
   - *April 24, 2023 Board meeting minutes*
4. Public Comments
5. Action / Discussion Items:

   FINANCE AND ADMINISTRATION
   - *Approval of Retention Agreement with Legal Counsel & Authorization to Initiate PFAS Litigation (Approval)*

   WATER

   WASTEWATER
   - *Regional Sewer Capacity & Wet-Weather Planning: Engineering & Program Support (Approval)* ***(salmon)*** *(digital Board packet, pages 6-16)*
   - *Pretreatment Plant (PTP) Electrical Study (Approval)* ***(gray)*** *(digital Board packet, pages 17-40)*
6. Monthly Project Updates / Information Items (1st Board meeting per month) *(digital Board packet, pages 41-46)* **– May 2023 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		
May 22, 2023	June 12, 2023	June 26, 2023

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
April 24, 2023

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:10 p.m. on Monday, April 24, 2023, Chairman Brian Nagle 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. Brian Nagle, Amir Famili, Ted Lyons, Linda Rosenfeld, Norma Cusick, Kevin Baker, Jeff Morgan, and Sean Ziller were present for Roll Call, and remained for the duration of the meeting.

Solicitor Michael Gaul of KingSpry was present along with Authority Staff, Liesel Gross, Ed Klein, Andrew Moore, Chris Moughan, Phil DePoe, Chuck Volk, Susan Sampson, Albert Capuzzi, and Lisa Miller.

Chairman Nagle announced that the Board received their electronic and hard copies of the Board packet in advance and asked if anyone did not receive their copy of the packet. A copy of the packet is also available online.

REVIEW OF AGENDA

Liesel Gross announced that there are no changes or additions to the agenda; however, an Executive Session is planned for after the regular meeting to discuss legal matters with the Solicitor.

APPROVAL OF MINUTES

April 10, 2023 Meeting Minutes

On a motion by Linda Rosenfeld, seconded Norma Cusick, the Board approved the minutes of the April 10, 2023, Board meeting as written (8-0).

PUBLIC COMMENTS

None.

Resolution No. 4-2023-1: Destruction of Authority Documents

Liesel Gross explained that the Resolution is an annual process whereby the Authority Board must formally approve the disposition of certain records in accordance with the Pennsylvania Municipal Records Act. There was brief Board discussion. Ted Lyons recommended keeping insurance records forever.

On a motion by Linda Rosenfeld, seconded by Amir Famili, the Board approved Resolution No. 4-2023-1 (8-0).

KISS System Modeling – Final Alternatives Analysis

Phil DePoe gave a presentation and overview of the Final Alternatives Analysis (FAA) phase of the regional Act 537 Plan development project for the Kline's Island Sewer System (KISS). In this phase of work, Arcadis will evaluate a final group of potential solutions to address the dry-weather and wet-weather sewage flows in the system through the year 2035 and 2050. During a future meeting, the Board will discuss the decision criteria to be used to select the final alternative that will be included in

the Act 537 Plan submission to the Pa. Department of Environmental Protection (DEP). There was some Board discussion regarding the program objectives.

Mr. DePoe explained that in the FAA phase of work, Arcadis will determine the size, extent, and cost of the infrastructure improvements, and will use rainfall data from Hurricane Ida in 2021 to model results. The FAA work will also incorporate expected results from the municipalities' planned projects to eliminate inflow and infiltration (I&I), as well as recognize future flows generated by new connections to the system. The FAA work is a refinement of work completed in the prior phase, the Preliminary Screening of Alternatives (PSOA), in which 19 alternatives were already evaluated and narrowed down. Mr. DePoe provided a summary of the PSOA work, which identified key projects that must be included in the final solution: wet-weather capacity projects at the Kline's Island Wastewater Treatment Plant; conveyance enhancements to address the bottlenecks within the Little Lehigh Interceptor; conveyance enhancements to address the Western Lehigh Interceptor; and the KISS municipalities' I&I source reduction projects. The FAA will further refine these project concepts and is expected to be completed by late October 2023. More Board discussion followed regarding the projects to be analyzed in this phase and the municipalities' I&I source reduction efforts. There was additional discussion regarding the Authority's role in approving the final Act 537 Plan, and Liesel Gross explained that while the Board will be asked to approve the plan, DEP requirement is focused on each municipality's approval of the plan.

Mr. DePoe reviewed the next steps in the process and explained that an additional funding authorization for the program manager, AECOM, will be requested in May.

On a motion by Jeff Morgan, seconded by Amir Famili, the Board approved the Capital Plan Authorization for the FAA in the amount of $258,000.00 which includes the Professional Services Authorization to Arcadis in the amount of $208,000.00 (8-0).

Kline's Island WWTP: Primary Digester No. 2 Cleaning and Rehabilitation Project

Chuck Volk explained the project for mechanical upgrades of Primary Digester No. 2 that consists of rehabilitation of the gas mixing system compressor and line replacements along with new electrical control panels and related electrical components. This mechanical work is typically required to be completed every 10 years due to the corrosive environment inside the digesters, and the work is being completed while the digester is offline for cleaning. Zimmerman Environmental submitted the lowest bid for the general contract for the Project. Zimmerman Environmental has completed several Authority wastewater projects and is recommended for the award of the general contract. Diefenderfer Electrical Contractors submitted the lowest bid for the electrical contract for the Project. Diefenderfer has also completed prior Authority projects satisfactorily, and is recommended for the award of the electrical contract.

On a motion by Ted Lyons, seconded by Amir Famili, the Board approved the Capital Project Authorization for the Construction Phase in the amount of $248,650.00 which includes the General Contract award to Zimmerman Environmental in the amount of $131,500.00, the Electrical Contract award to Diefenderfer Electrical Contractors in the amount of $64,950.00, and the Professional Services Authorization to GHD, Inc. in the amount of $27,500.00 (8-0).

MONTHLY FINANCIAL REVIEW

Ed Klein gave a presentation and review of the March 2023 financial statements highlighting the variances between actual expenses and budgeted or forecasted expenses. Mr. Klein reported that financial results for March are positive.

MONTHLY SYSTEM OPERATIONS OVERVIEW

Andrew Moore reviewed the March 2023 Operations report and noted that water production is consistent for this time of the year although precipitation for the year has been low compared to previous years. He reported on a bypass that occurred at the Heidelberg Heights Wastewater Treatment Plant following a rain event of 1.62 inches. Chris Moughan reported on the water main replacement work being completed by Authority staff on Gordon Street in Allentown. Mr. Moore highlighted that, in March, the EPA proposed new drinking water standards for six PFAS compounds, and the Authority is reviewing the proposed regulation to determine impacts.

STAFF COMMENTS

None.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

BOARD MEMBER COMMENTS

None.

EXECUTIVE SESSION

Chairman Nagle announced an Executive Session would be held following the close of the meeting to discuss legal matters with the Solicitor.

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 1:26 p.m.

Linda A. Rosenfeld
Secretary

MEMORANDUM

Date: May 8, 2023

To: LCA Board of Directors
Liesel Gross, CEO

From: Phil DePoe, Senior Planning Engineer

Subject: Regional Act 537 Plan Program Management, 2023 Amendment: Planning Phase

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization: Regional Act 537 Plan Program Management, Planning Phase	$445,510
1A	Professional Services Authorization: AECOM – Regional Act 537 Plan Program Management, 2023 Amendment	$405,510*

**Included in the Capital Project Authorization*

1. Regional Act 537 Plan Program Management

AUTHORIZATION OVERVIEW:
To begin the process of developing the long-term Regional Act 537 Plan, the evaluation of the LCA Pretreatment Plant (PTP) Alternatives was identified as an immediate need to assist with completing the full alternatives analysis to be completed by March 2025. AECOM began this initial effort in late 2019 and was fully authorized in August 2020. While their authorizations in 2019 and 2020 were focused on the PTP, AECOM was designated as the Act 537 Program Manager in 2021 and have been instrumental in reviewing the work of the engineering team and providing advice to both LCA and the City related to the entire planning process for the Kline's Island Sewer System (KISS).

In addition to the August 2020 authorization, additional Act 537 authorization requests have been granted through May 2023. An additional authorization is now requested to continue AECOM's Act 537 Plan Program Management planning efforts. This Program Management effort will cover a work scope that continues to evolve as the KISS region enters the most critical phase of Act 537 planning.

FINANCIAL:
The LCA Suburban Division fund Task A of these services. The LCA Allentown Division will fund the remaining portion of the 2023 services (Tasks B-E). See attached proposal for price per task.

CURRENT STATUS:
See below for brief a review of authorizations related to AECOM's role as Act 537 Program Manager to date:

- During the AO era from 2013-2016, LCA engaged AECOM to assist with sewer planning needs. A major technical memorandum was delivered in May 2016.
- In late 2019, AECOM was re-engaged to review the current Act 537 planning status. A memorandum was delivered in March 2020.
- In August 2020 AECOM was authorized by the Board (along with major assistance from Jacobs) to perform a detailed Pretreatment Plant direct discharge analysis for Act 537 planning. A major technical memorandum was delivered in October 2021.

- Minor authorizations occurred from June 2021 through February 2022.
- In both February and June of 2022, AECOM was reauthorized by the Board to continue Act 537 planning efforts. A major technical memorandum is pending delivery.
- **In May 2023, another re-authorization is requested to continue these services as Act 537 Program Manager.**

Major program management deliverables to date (since August 2019) include the following:

- **Western Lehigh Interceptor Capacity Planning – Phase 1 Report (March 2020)**
- DRBC Regulatory Assessment – LCA Direct Discharge to the Lehigh River (August 2020)
- Revenue Planning Tool Phase 1 Memo (November 2020)
- Act 537 Plan Report: Lehigh River PTP Direct Discharge Force Main (June 2021)
- BioActiflo Treatability Study (KIWWTP and PTP) (July 2021)
- Revenue Planning Tool, Phase 2, and User's Manual (July 2021)
- CEPT Bench Study at PTP (September 2021)
- **Act 537 Plan – AECOM Report 2021 (October 2021)**
- BioActiflo Additional Study (January 2022)
- Miscellaneous workshops (risk registry, tunneling, cost estimating, innovative PTP technology, GIS analyses of peak contribution by catchment/capita)
- **Act 537 Plan – AECOM Technical Memo 2023 (pending delivery)**
- Numerous other miscellaneous items

THIS APPROVAL – PLANNING PHASE:

AECOM serves as the Program Manager for the Regional Act 537 Plan development and this authorization will continue their current role. These services include, but are not limited to, the following:

Professional Services
• Pretreatment Plant Expansion/Rehabilitation Needs (Task A)
• Kline's Island WWTP Coordination (Task B)
• Conceptual Micro-Tunnel Evaluation (Task C)
• Arcadis Coordination (Task D)
• General Coordination (Task E)

These services are segmented into the following tasks:

- Pretreatment Plant Expansion/Rehabilitation Needs (Task A)
    - Continued review of additional flow and load scenarios
    - Review of load shifting impact on KIWWTP
    - Continued review of recently published Master Plan
- Kline's Island WWTP Coordination (Task B)
    - Additional review of alternate we weather treatment scenarios
    - Updating the 2015 KIWWTP model for PTP load-shifting impacts
    - Continued coordination with Kleinfelder and the City of Allentown
- Conceptual Micro-Tunnel Evaluation (Task C)
    - Research readily available geotechnical information
    - Evaluate tunneling technologies for installing new interceptor
    - Identify feasible horizontal alignment along with challenges and risks
    - Prepare a brief technical memorandum
- Arcadis Coordination (Task D)
    - Collaboration of modeling, source reduction impacts, and overall alternative evaluations for long-term needs
    - Assist with identification of project elimination opportunities

- General Coordination (Task E)
    - On-going general program management support
    - Attendance at various meetings
    - Updating costs estimates for the Final Alternatives Analysis

See proposal for detailed scope of services.

Major program management deliverables within this current authorization request include the following:

- Act 537 Revised Technical Memorandum (late 2023/early 2024 delivery)
    - Value engineering technical memorandum (PTP)
    - Preparation of anticipated NDPES permit (KIWWTP)
    - Summary of process modeling evaluations, if warranted (KIWWTP)
    - Refinement of wet weather scenarios and alternatives planning (KIWWTP)
    - Updated permitting technical memorandum (KIWWTP)
    - Compilation of updated opinions of probable construction
    - Updating the Microsoft Project Act 537 schedule
    - Documentation of key findings, decisions, and analyses completed for future inclusion in Act 537 Plan submission
    - **Tunnel Feasibility Study**

CONSULTANT SELECTION PROCESS:

AECOM was retained by LCA during the 2013-2016 Act 537 era timeframe to investigate wastewater treatment capacity options for the Western Lehigh service area. In late 2019, they were once again retained to compile a status update on recent planning efforts. And in August 2020, AECOM was authorized to perform a detailed analysis on the PTP direct discharge option (along with many other items). Due to their intimate knowledge acquired through the prior planning process, LCA recommends AECOM be retained once again for this current phase of the Regional Act 537 Plan development.

See above sections for a history of AECOM's involvement in the Act 537 process.

SCHEDULE:

This authorization is a continuation of their Regional Act 537 Plan Program Management services granted by the Board in August 2020, February 2022 and June 2022. This Act 537 planning work is mandated by PA DEP to be submitted by March 2025.

FUTURE AUTHORIZATIONS:

Future authorizations are anticipated in 2024 and beyond, spanning throughout the remainder of the Regional Act 537 planning process.

AECOM
625 West Ridge Pike, Suite E-100
Conshohocken, PA 19428

610.832.3500 tel
610.832.3501 fax

April 30, 2023

Ms. Liesel M. Gross
Chief Executive Officer
Lehigh County Authority
1053 Spruce Street
Allentown, PA 18106-0348

RE: **Lehigh County Authority Act 537 Support Proposal, 2023 Amendment**

Dear Ms. Gross,

AECOM Technical Services, Inc. (AECOM) appreciates the opportunity to provide this proposal to Lehigh County Authority (the "Authority", or "LCA") for continuing our support of the ACT 537 planning effort as described herein. The prior Phase ran through December 2022 and we have been continuing our support of LCA with the Program based on your direction. As such, we are requesting additional budget to continue our support as Program Manager now through 2023 based on the additions in scope to the prior Professional Services Authorization titled: ***Regional Act 537 Plan Alternatives Analysis: Pretreatment Plant Upgrade Option - Planning Phase (signed August 24, 2020).***

As this work progresses and as additional information is better understood from the previously completed work under this scope, new meaningful tasks have been requested by LCA to further this effort. AECOM will continue to collaborate with the LCA and your other consultant partners and act as the overall Act 537 Program Manager to facilitate efforts, provide coordination, and provide critical technical insight for specific components to meet LCA's program goals. The following section identifies the details of the anticipated proposed scope of work for 2023. We recognize that priorities shift as new information is made available and AECOM will continue to work closely with LCA and communicate regularly to monitor progress and any alterations to the currently defined scope of work to focus our efforts and budget were LCA feels most necessary.

1.0 Scope of Work

The following sections outline AECOM's anticipated scope elements, assumptions, schedule, and proposed budget for this calendar year 2023 of this Project:

Task A Pretreatment Plant Expansion/Rehabilitation Needs

AECOM will continue providing support to LCA as the PTP options are further refined based on flow and load refinements, process considerations, review of master planning efforts as prepared by Jacobs, RNG evaluations, etc. The elements of this anticipated Work include:

- Review of additional scenarios including expanding industrial waste additions to Boston Beer segregation for anaerobic pre-treatment.
- Review the implications of separation of residential flows (per ARCADIS modeling) in base case scenario to KIWWTP (load shifting impact on KIWWTP).
- Evaluate dry weather by-pass discharge of flows around PTP to reduce capital investment needs of Master Plan.

- Review process simulations for alternate effluent goals to find most cost-effective scenario
- Review Jacobs Master Planning.
- Evaluate opportunities to optimize PTP for LCA and current needs to improve performance.
- Perform cost estimating reviews to evaluate compatibility with other estimates developed.

Deliverables for this task will include:

1. Preparation of a technical memorandum that captures proposed value additions or support studies that relate to the PTP.

Task B Kline's Island WWTP Coordination

AECOM will continue providing support to LCA with discussions around Kline's Island needs associated with the base case, load diversion scenarios from PTP and wet weather needs. The elements of this anticipated Work include:

- Additional review of alternate wet weather treatment scenarios at Kline's Island to reduce overall costs including running the two trickling filters in parallel (as developed by Kleinfelder).
- Update the KIWWTP GPS-X process model to the new platform and run sensitivity analyses with the KIWWTP model looking at increasing influent organic load to identify when nitrification stability becomes problematic. This information will inform considerations for chemically enhanced primary treatment or other measures to improve process performance while not triggering DRBC provisions for substantial alteration of the plant. Results will inform the PTP organic load needs.
- Leverage and update process model of KIWWTP to run up to two requested scenarios and issue summary of results for new dry weather simulations or proposed improvements (ex. Chemically enhanced primary treatment).
- Review parallel trickling filter treatment train concept and preliminary design, as prepared by Kleinfelder, for 150 MGD scenario.
- Review of Kline's Island permitting (PADEP and DRBC) needs and meetings with the City of Allentown to discuss impacts associated with any proposed alternatives.
- Evaluate wet weather treatment with BIOACTIFLO and direct discharge at KIWWTP for cases starting at 87 MGD in lieu of combining with parallel trickling filter treatment. This scenario evaluates wet weather treatment at KIWWTP and provisions for a dry weather by-pass around the stressed interceptors upstream of SCPS and no dry weather direct discharge considerations. This scenario has also been referred to as the 0/40 Option.
- Continued coordination with Kleinfelder and City of Allentown regarding wastewater planning implications related to dry weather flows / loads and wet weather flow scenarios.
- Review main influent pump station improvement options being developed by Klienfelder for wet weather capacity expansion.
- Perform cost estimating reviews to evaluate compatibility with other estimates developed.

Deliverables for this task will include:

1. Provide summary of process modeling evaluations.
2. Provide documentation of reviews via short Technical Memoranda.

Task C Concept Micro-Tunnel Evaluation for final 2.5-mile segment from Park Pump Station vicinity to KIWWTP along Little Lehigh Creek.

Based on the PSOA scenarios, a micro-tunnel installation for conveyance of flows around the bottlenecks along Martin Luther King Blvd to send flow into KIWWTP is worthy of evaluation. It is understood that LCA would like AECOM to perform a feasibility study of a trenchless alternative to install a new relief trunk sewer and/or force main along Little Lehigh Creek as part of an effort to upgrade and create a more robust conveyance system to address increasing flows and provide relief to the existing interceptors serving the immediate City and signatories.

This proposed new relief trunk sewer (and/or force main) would be installed using micro-tunneling methods or potentially soft ground tunneling, with likely diameters in the 4 to 6-ft range. The sewer would extend from the Kline Island WWTP, generally running in the vicinity of Martin Luther King Boulevard along an old rail bed alignment and paralleling Little Lehigh Creek for a total length of approximately 2-1/2 miles.

The goal of this study is to:

- Research readily available geotechnical information along the project corridor
- Evaluate both microtunneling and pressurized closed-face tunneling technologies for installing the new trunk sewer.
- Identify a feasible horizontal alignment for the new pipeline.
- Identify the potential challenges and risks faced for the new pipeline installation (e.g., permits, easements, etc.)
- Prepare a brief technical memorandum summarizing the findings of the study, including preparation of a conceptual plan and profile for the new pipeline and an estimate of potential construction cost.

Scope of Services

1. Review existing pertinent infrastructure and system operating information provided by LCA. Research potential sources of geologic and subsurface information along the proposed pipeline corridor, including past LCA projects and nearby bridge and roadway projects. Evaluate available subsurface information and summarize anticipated ground conditions to be encountered. Review existing GIS data for property lines and property ownership, and environmental resource areas.
2. Conduct a kickoff meeting with LCA staff to review the goals of the project and to discuss the approach for conducting the feasibility study. Also, make a site visit to review

existing conditions and possible constraints along the project corridor to facilitate the development of a conceptual horizontal alignment.

3. Screen potential construction options for the new trunk sewer assuming up to a 6-ft diameter pipeline. Evaluate both micro-tunneling and pressurized, closed-face soft ground tunneling. For each option, identify potential jacking and receiving pit (or launch and receiving shaft) locations; staging and laydown area requirements; pipe material requirements; and constraints anticipated for the new pipe installation. Both a gravity and force main alignment alternative will be prepared.
4. For the recommended options (gravity and force main) prepare a 1 inch = 400 ft conceptual (10%) plan and profile of the proposed pipeline alignments. The plans will show a preliminary pipeline alignment, potential shaft locations and connections to the existing LCA conveyance system at both terminal ends. The conceptual plans will be based on available geotechnical data and existing conditions along the project corridor.
5. Prepare a planning level construction cost for the recommended trunk sewer option based on an American Association of Cost Estimating (AACE) Class 4 estimate.
6. Prepare a power point presentation and draft technical memorandum (TM) summarizing the findings of the feasibility study. The TM will also identify the next steps for advancing the project including additional studies and field investigations. Conduct a meeting to present the findings to the Authority, review the draft TM and to discuss LCA's comments. Incorporate comments and transmit a final TM to LCA.

Micro-tunnel feasibility evaluation assumptions:

- LCA will provide support for the feasibility study including providing available subsurface information at either KIWWTP or the Allentown Filtration Plant.
- AECOM will solicit available geotechnical information from PennDOT area projects.
- Guidance on proposed pipe diameter to be provided by ARCADIS
- AECOM will investigate both a gravity and force main micro-tunnel concept
- AECOM will use GIS mapping as the base map.
- The micro-tunnel will not be a deep rock tunnel or be sized to provide peak flow storage.

Task D ARCADIS Coordination

AECOM will continue providing support to LCA with further review and evaluation around collection and conveyance system needs associated with the near term 2035 horizon as well as 2050 conditions. The elements of this anticipated Work include:

- Collaborate with ARCADIS on modeling, source reduction impacts and overall alternative evaluations for long-term needs.
- Request model simulations and review results of Final Alternative Analyses with ARCADIS.
- Investigate conceptual layout for alternate conveyance scenarios.
- Assist with identification of project elimination vs. just reduction in scale for proposed improvements to attain more significant cost savings.

- Perform cost estimating reviews to evaluate compatibility with other estimates developed.

Deliverables for this task will include:

1. Refinement of wet weather scenarios for communication to KISS partners.

Task E General Coordination

- On-going general program management support (6 months at $10,000/month)
- Attendance at monthly KISS meetings (6 in total).
- Update schedule in Microsoft Project to illustrate critical path components of submitting the ACT 537 plan based on the interdependencies of tasks.
- Evaluate the final screening of alternatives for the wastewater improvements.
- Develop Initial Risk Register and conduct initial workshop to solicit input from stakeholders to accompany the FAA.
- Attendance at four meetings with the City of Allentown.
- Attendance at two meetings with PADEP.
- Support discussions with DRBC and PADEP regarding new Part II WQS permit and Ch 94 reporting. Preparation and attendance at one DRBC virtual meeting associated with FAA.
- Update estimates during FAA.
- Identify and get a head start on critical items that could commence following FAA process to compress schedule. Such considerations could include advancing survey, geotechnical data gathering, property acquisition or easement securement, wetland delineations, etc along any finalized corridors.
- In addition, AECOM anticipates meetings with the WLI and at LCA regarding the project as part of the continuation of the wastewater planning effort, and more are anticipated as we collaboratively form the next steps and develop a sharper, more actionable timeline.

Deliverables for this task will include:

1. An updated permitting technical memorandum to summarize input received and implications for KIWWTP outfalls.
2. Compilation of Updated opinions of probable construction costs for scenarios to append to prior 2022 Technical Memo.
3. Microsoft Project Schedule detailing the overall progression of ACT 537 Planning needs.

2.0 Assumptions

The proposal has been based on the following assumptions:

1. Local travel will be based on mileage from AECOM's Conshohocken Office to LCA's offices or facilities.

2. Budget can transfer between tasks.
3. Virtual meetings will be used in lieu of in-person meetings whenever feasible.

3.0 Schedule and Budget Estimate

AECOM is continuing services on this project and has already been in active consultation with the Authority staff through studies, meetings and conference calls in order to be responsive to LCA's questions and needs, avoid delays and enable initial planning and insight on the project objectives.

A proposed budget to complete the additional requested scope of anticipated services extending through 2023 is indicated below:

Item	Estimated Hours	ODCs	Labor Budget	Estimated Budget
Task A - Pretreatment Plant Expansion/Rehabilitation Needs	126	$0	$22,300	$22,300
Task B - Kline's Island WWTP Coordination	234	$0	$40,920	$40,920
Task C – Micro-tunneling Concept Plan	756	$5,500	$164,280	$169,780
Task D - ARCADIS Coordination	192	$0	$33,400	$33,400
Task E - General Program Management Support	710	$1,000	$138,110	$139,110
Total	**2,018**	**$6,500**	**$399,010**	**$405,510**

AECOM proposes to conduct this project on a Time and Materials basis in accordance with the Master Services Agreement for Professional Services between Lehigh County Authority and AECOM Technical Services, dated April 24, 2023.

Once again, we appreciate the opportunity to provide this proposal to you and look forward to assisting the Authority with this important project. Please reply that we are authorized to proceed in accordance with this proposal for our records. If you have any questions or need additional information, please contact me at 302-379-0267 or chris.curran@aecom.com.

Sincerely,

Christopher Curran, PE
VP, Project Director

Cc: Mr. Philip DePoe, PE

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.:	SD-S-3/AD-S-27	**BUDGET FUND:**	BOTH WW Div\Wastewater\Capital
PROJECT TITLE:	Regional Act 537 Plan Program Management – Planning Phase	**PROJECT TYPE:**	
		☐	Construction
		☒	Engineering Study
THIS AUTHORIZATION:	**$445,510**	☐	Equipment Purchase
TO DATE (W/ ABOVE)	**$1,203,806**	☐	**Amendment**

DESCRIPTION AND BENEFITS:

To begin the process of developing the long-term Regional Act 537 Plan, the evaluation of the LCA Pretreatment Plant (PTP) Alternatives was identified as an immediate need to assist with completing the full alternatives analysis to be completed by March 2025. AECOM began this initial effort in late 2019 and was fully authorized in August 2020. While their authorizations in 2019 and 2020 were focused on the PTP, AECOM was designated as the Act 537 Program Manager in 2021 and have been instrumental in reviewing the work of the engineering team and providing advice to both LCA and the City related to the entire planning process. In addition to the August of 2020 authorization, additional Act 537 authorization requests have been granted through May 2023. This Program Management effort will cover a work scope that continues to evolve as the Region enters the most critical phase of Act 537 planning.

Prior Authorizations: *In late 2019, AECOM was re-engaged to review the current Act 537 planning status. From August 2020 through October 2021, AECOM was authorized (along with major assistance from Jacobs) to perform a detailed Pretreatment Plant direct discharge analysis for Act 537 planning. In both February 2022 and June 2022, AECOM was re-authorized to continue Act 537 planning efforts for the entire KISS system (acting as the Program Manager).*

This Authorization: *Act 537 Program Management Support Amendment for the remainder of 2023 and beyond. See attached Board Memo and proposal for further project details.*

AUTHORIZATION STATUS:

Requested This Authorization (5/8/23)	
Design Phase	
Staff	**$20,000**
Contractor	**$0**
Engineering Consultant	**$405,510**
Contingency	**$20,000**
Total This Authorization	**$445,510**

Prior Authorizations (2019-present)	$758,296
Subtotal (Prior + This Authorization)	**$1,203,806**
Future Authorizations (2024 and beyond)	*TBD*

REVIEW AND APPROVALS:

Project Manager	Date	Chief Executive Officer	Date
Chief Capital Works Officer	Date	Chairman	Date

Lehigh County Authority

1053 Spruce Street * P.O. Box 3348 * Allentown, PA 18106-0348
(610)398-2503 * FAX (610)398-8413 * Email: service@lehighcountyauthority.org

PROFESSIONAL SERVICES AUTHORIZATION
AMENDMENT NO. 7

Professional: AECOM
625 West Ridge Pike, Suite E-100
Conshohocken, PA 19428

Date: May 8, 2023
Requested By: Phil DePoe
Approvals
Department Head: _____
Chief Executive Officer: _____

Suburban/Allentown Division: Regional Act 537 Plan Program Management Support (2023) - Planning Phase

To begin the process of developing the long-term Regional Act 537 Plan, the evaluation of the LCA Pretreatment Plant (PTP) Alternatives was identified as an immediate need to assist with completing the full alternatives analysis to be completed by March 2025. AECOM began this initial effort in late 2019 and was fully authorized in August 2020. While their authorizations in 2019 and 2020 were focused on the PTP, AECOM was designated as the Act 537 Program Manager in 2021 and have been instrumental in reviewing the work of the engineering team and providing advice to both LCA and the City related to the entire planning process.
In addition to the August of 2020 authorization, additional Act 537 authorization requests have been granted through May 2023. This additional scope of services include, but are not limited to, the following:

Professional Services (1)
1. Pretreatment Plant Expansion/Rehabilitation Needs (Task A)
2. Kline's Island WWTP Coordination (Task B)
3. Conceptual Micro-Tunnel Evaluation (Task C)
4. Arcadis Coordination (Task D)
5. General Coordination (Task E)

(1) Please reference the cover Memo for additional information.

- **Prior Program Manager Approvals:**
  (a) $39,696 in August 2019; (b) $203,500 in August 2020; (c) $37,100 in June 2021; (d) $40,000 in October 2021; (e) $100,000 in February 2022; (f) $270,000 in June 2022; (g) $13,000 in February 2023

- **This Program Manager Approval (May 2023): $405,510**

- **Approval Amount (not to be exceeded without further authorization): $1,108,806**

Time Table and Completion Deadline: As required to meet various critical deadlines as set forth in the proposal.

(For Authority Use Only)

Authorization Completion:

Approval: _____ **Actual Cost:** _____ **Date:** _____

MEMORANDUM

Date: May 1, 2023

To: LCA Board of Directors
Liesel Gross, C.E.O.

From: Albert J. Capuzzi, Director of Engineering & Asset Management

Subject: Suburban Division: Pretreatment Plant, Electrical Study

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Professional Services Authorization – Current Solutions	$72,000

Project Overview:

Suburban Division: Electrical Assessment Study – Pretreatment Plant

In 2022, a Master Plan was completed for the Pretreatment Plant (PTP) in Fogelsville. The Master Plan, presented to the LCA Board in March 2023, described necessary capital improvements and sewer capacity expansion needs of the facility to continue treating current and future industrial wastewater in the western Lehigh County region. One of the Master Plan recommendations was to conduct a deeper review of the PTP's electrical facilities, which may be reaching the end of their useful life. On 5/8/2023, Board authorization will be sought to begin this assessment using a consultant, Current Solutions. The study will include coordination of electrical testing and review of results, completion of an arc flash study and labeling review, and development of recommendations regarding the replacement of electrical equipment. LCA's contract operator at the PTP, Jacobs, will coordinate with Current Solutions to complete the testing work.

FINANCIAL:

This study will be funded by the Suburban Wastewater Division.

PROJECT STATUS:

Pending Board approval of this study.

THIS APPROVAL – STUDY PHASE:

Lehigh County Authority (LCA) intends to retain the services of an electrical consulting firm to complete the study. The following table summarizes the professional services to be performed:

Professional Services
1.Develop Testing Plan, Review Testing Proposal, Coordinate Testing*, Review Testing Results.
2. Complete Coordination Study
3. Complete Arc Flash Study and Labeling
4. Provide Recommended Improvements and Costs

** Jacobs will contract directly with the testing firm and coordinate their work at the PTP, including required shutdowns.*

CONSULTANT SELECTION PROCESS:
LCA staff have reviewed the qualifications of several firms and recommend Current Solutions for the work based on their relevant experience in assessing electrical systems at critical water and wastewater facilities. While Jacobs, the current PTP contract operator, has acceptable qualifications to complete this work, an independent review of the needs at the facility will be beneficial, considering the cost and risk associated with electrical system performance. As part of the proposal process, Current Solutions met with LCA's engineering and operations staff, visited the facility on April 20, 2023, and met with Jacobs staff. LCA staff have familiarity with work completed by Current Solutions for other utilities, as well as completing design review of the Substation 1 and 2 projects at the Kline's Island Wastewater Treatment Plant, with acceptable results. Current Solutions' proposal dated April 27, 2023 is attached for Board review.

CURRENT SOLUTIONS – COMPANY INFORMATION:

Current Solutions is a national electrical engineering firm based in Charlotte, NC. They completed a similar master plan for the City of Bethlehem working as a subcontractor for D'Huy. Mark Cavallaro, P.E., is the founder and President of Current Solutions, P.C. and has more than 35 years of experience in the electrical industry. He has overseen and managed quality control for all electrical engineering analysis and design projects, numbered in the hundreds, since the firm's inception, and has been involved with the project management and quality control of for all of Current Solutions P.C. projects. Mr. Cavallaro is both a Professional Engineer and Master Electrician with excellent managerial, communication and personal skills. Coupled with his certifications and licenses, he has solid "practical field experience" with large scale power distribution systems, installation, maintenance and testing of electrical equipment for Educational, Commercial, Industrial, Municipal and Institutional facilities and projects.

PROJECT SCHEDULE:
Assuming Board approval at the May 8, 2023 meeting, Notice to Proceed will be issued in May 2023 with an estimated completion date of November 2023

FUTURE AUTHORIZATIONS: Pending result of the study.

CURRENT SOLUTIONS P.C.

April 27, 2023

Mr. Albert J. Capuzzi, P.E.
Director of Engineering & Asset Management
Lehigh County Authority
1053 Spruce Road
Allentown, PA 18106
albertcapuzzi@lehighcountyauthority.org

Facility: Pre-Treatment Plant

Proposed Project: Development of Electrical Maintenance Testing Scope, Power System Analysis & Equipment Evaluation

Dear Mr. Capuzzi:

On behalf of Current Solutions, P.C. we would like to thank you for the opportunity to submit our attached proposal to conduct engineering services associated with the development of Electrical Maintenance Testing Scope and to perform a power system analysis and electrical equipment evaluation associated with the electrical power system and equipment at Lehigh County Authority's Pre-Treatment Plant in Allentown, PA.

Organizationally, we all truly understand the importance of our client's needs, and we strive to provide quality services to each and every new endeavor. Given the opportunity, we would be very pleased to work with your team on this project and are confident that you will find our specialty electrical engineering services, valuable and professional.

At your request I have also attached Current Solutions, P.C. profile, qualifications and my biography with industry experience.

Approximately 85% of our business has been obtained through word of mouth and referrals and we provide our engineering and consulting services to all types of facilities across the U.S. For more company information, you can also visit our web site www.currentsolutionspc.com.

After your receipt of this proposal if you would like to review in greater detail or would like additional information, please contact me directly. Thank you for your consideration.

Very truly yours,

Mark B. Cavallaro, P.E.
Principal

Enclosures

SUMMARY

1. Current Solutions, P.C. proposes to provide the engineering and consulting services for the Lehigh County Authority Pre-Treatment Plant as outlined in this proposal consisting of;
    A. Develop Electrical Equipment Maintenance Testing Scope
    B. Power System Analysis & Electrical Equipment Evaluation Report
2. All services performed by Current Solutions, P.C. will be performed by and under the direction of the company principal Mark B. Cavallaro, who is licensed professional engineer and licensed master electrician with more than 35 years of experience in the engineering design and analysis of power systems for commercial, industrial, institutional and environmental facilities.

SCOPE OF SERVICES – DEVELOP ELECTRICAL EQUIPMENT MAINTENANCE TESTING SCOPE

Current Solutions, P.C. proposes to provide and perform the following services associated with the development of an electrical equipment maintenance testing scope of work document for the Lehigh County Authority Pre-Treatment Plant;

1. Current Solutions, P.C. proposes to develop an Electrical Equipment Maintenance Testing scope of work document for the maintenance testing of existing electrical equipment at the Pre-Treatment Plant. The scope development
2. Electrical Equipment: The scope of work shall include technical scope of testing work and drawings for use by Lehigh County Authority in obtaining a bid from their preferred electrical testing firm (CE Power / Qualus – formally Reuter Hanney) and shall include the following equipment and associated devices;
    A. Medium Voltage Main Switchgear including;
        - Switchgear assembly, bus connections and cable to equipment connections
        - Medium voltage switches and fuses
        - Lightning arrestors
        - Instrument transformers (CTs & PTs)
        - Metering devices, excluding the utility metering
    B. Substation Equipment including;
        - Primary switches
        - Lightning arrestors
        - Substation transformers
        - Substation secondary switchgear, breakers, fuses and trip units
        - Secondary switchgear bus connections and cable to equipment connections
        - Instrument transformers (CTs & PTs)
        - Metering devices

C. Motor Control Centers including;
   - MCC assembly, bus connections and cable to equipment connections
   - MCC breakers, motor circuit protectors, contactors and starters
   - Surge arrestors
   - Instrument transformers (CTs & PTs) and metering devices if applicable to the MCC

3. Record and Document Device Nameplate Data: The scope shall also include for the testing company to record and document device (breakers and fuse) manufacturer nameplate data for use in the power system analysis as outlined below.

4. Power Feeder Cable Testing: In addition to the electrical equipment testing the scope will include the testing of medium voltage and low voltage power feeder cable from the main medium voltage switchgear up to each motor control center. The power feeder cable testing will determine the insulation integrity of medium voltage power feeders and 600 Volt power feeders between distribution equipment and provide information on the cable size and insulation type. The testing scope will not include surveying of the existing underground electrical duct banks to verify existing conduits nor a survey of electrical manholes and report on their integrity.

5. Substation Grounding: The scope will include the testing of substation below grade grounding and bonding systems to determine the integrity of the connections from the electrical equipment to earth for personnel safety.

6. The maintenance testing scope will include testing activities to be performed at fixed intervals of time in coordination with the requirements of the Pre-Treatment Plant operations and staff. Current Solutions, P.C. approach in the development of the scope of testing is to develop a document that can be used in the future for additional scheduled maintenance testing and if applicable at other LCA facilities with the same electrical equipment at the Pre-Treatment Plant.

7. Test Procedures in Accordance with Industry Standards: The test procedures included in the scope will be on equipment manufacturers recommendations, the InterNational Electrical Testing Association (NETA) Maintenance Testing Specifications and/or industry standards.

8. The scope of testing document will include a schedule of tests based on age, priority and condition of the equipment, and the testing requirements will include; visual and mechanical tests, various electrical tests including but not limited to equipment assemblies, insulation testing, protective devices, starter components, infrared thermography and ground resistance testing.

9. Facility and Equipment Assessment Survey:

   A. Current Solutions, P.C. shall visit the plant to assess the overall power distribution system and survey the existing equipment for fact-finding, information gathering and collect information to develop the testing scope.

B. Current Solutions, P.C. shall coordinate with the facility an acceptable and practicable access schedule for the survey and will need the assistance of a maintenance staff member familiar with the plant and existing electrical equipment.

C. Lehigh County Authority shall provide personnel to escort our engineers and field technicians to the equipment location and to open all electrical room doors, locks, and assist in identifying equipment locations.

D. During the survey, Current Solutions, P.C. shall review and coordinate with plant staff to learn system and equipment changes from what is shown in the original design drawings.

10. Power System Single Line Diagram: In order to communicate the overall power system and equipment, Current Solutions, P.C. will develop power system single line diagrams representing the interconnection of the existing electrical distribution system and equipment.

    A. Plant operations staff will provide Current Solutions, P.C. with a markup of the original design drawings with equipment and system changes.

    B. Current Solutions, P.C. shall review the details with Lehigh County Authority to ensure the accuracy of the power system, equipment and connections.

    C. The single line diagrams will also be a useful tool for plant operations and maintenance.

11. Review of Past Infrared Test Reports: Plant operations staff indicated that past electrical testing included only an infrared scan of the existing equipment. Current Solutions, P.C. shall obtain from plant operations and review for initial understanding of the condition of the equipment.

12. Coordination with LCA and Plant Operations: During the development of the testing scope document, Current Solutions, P.C. shall coordinate and communicate with LCA and plant operations to determine any constraints and limitations for the testing work.

13. Testing Scope Submissions: Current Solutions, P.C. shall submit a draft document of the electrical equipment testing scope to LCA for review and comment and participate in an online virtual meeting to review the scope with LCA. After comments received from LCA, Current Solutions, P.C. shall update the scope for final use by LCA in obtaining a bid. LCA is responsible for developing any general conditions requirements for the solicitation of a bid.

14. Bid Review: Current Solutions, P.C. shall review the submitted bid for technical content and compare it to the scope of testing document.

15. Testing Activities Support: Current Solutions, P.C. shall provide the following services during the testing activities being performed at the plant;

    A. Participate in an online virtual project kick-off meeting with LCA, plant operations staff and the testing company, develop and distribute meeting minutes.

B. Participate in up to four (4) online virtual project meetings with LCA, plant operations staff and the testing company, and develop meeting minutes. The intent of the meetings are to review the progress of the testing activities. Current Solutions, P.C. shall develop and distribute meeting minutes after each meeting.

C. Participate in an online virtual project closeout meeting with LCA, plant operations staff and the testing company after the completion of the testing. Develop and distribute meeting minutes.

D. Be available for questions and interpretations of the testing scope by LCA, plant operations staff and the testing company.

16. Testing Report Review & Summary: The testing scope document will include requirements for the testing company to submit test results report for all equipment tested. Current Solutions, P.C. shall review the test results, develop and provide a summary report of the electrical equipment testing results.

Deliverables

1. Submission of an electronic file in pdf format of the draft document of the electrical equipment testing scope.
2. Submission of an electronic file in pdf format of the completed final document of the electrical equipment testing scope.
3. Submission of an electronic file in pdf format of the power system single line diagram.

SCOPE OF SERVICES – POWER SYSTEM ANALYSIS and ELECTRICAL EQUIPMENT EVALUATION REPORT

Current Solutions, P.C. proposes to provide and perform the following services associated with a power system analysis for the Lehigh County Authority Pre-Treatment Plant.

1. General Engineering associated with the Analysis:

   A. Current Solutions, P.C. will perform a power system analysis of the existing electrical distribution system and associated electrical equipment as outlined in this proposal. The analysis will be computer-generated report developed specifically for the Lehigh County Authority Pre-Treatment Plant.

   B. This scope of engineering services is based on the availability of facility personnel to answer questions provided either verbally or in writing related to the power distribution system arrangement and operation in the development of the analysis.

   C. Current Solutions, P.C. shall contact and coordinate with the serving electric utility company and obtain the utility company available short circuit contribution and protective device settings for all service entrance overcurrent devices immediately upstream of the electrical services. However, the settings for these devices will be the responsibility of the utility company. Current Solutions, P.C. will need the contact at the serving electric utility company to communicate with them.

   D. The scope of the analysis will be limited to 3-phase, 60 Hz, AC electrical power system and related equipment as outlined in this proposal. The analysis will include the following equipment as shown on the design drawings single line diagrams;

      i. Medium Voltage Switchgear

      ii. Substation Switches

      iii. Substation Transformers

      iv. Low Voltage Switchgear

      v. Motor Control Centers

      vi. Distribution Panels, Panelboards and Building Transformers

      vii. 480 Volt Disconnect Switches and Enclosed Starters

      viii. VFDs and Control Panels with Starters

   E. Equipment Included in the Arc Flash Analysis: The proposed scope of services related to the arc flash analysis includes a full arc flash analysis for all electrical distribution equipment as shown on the original design drawings by James M. Montgomery Consulting Engineers, Inc. including the equipment outlined above as shown on the design drawings single line diagrams.

This is the preferred approach and is considered the most comprehensive in the industry and strictly follows the requirements in OSHA requirements and industry standards. However, some consultants believe including arc flash labels on 480 volt disconnect switches, enclosed starters, VFDs and control panels with starters is not necessary. Current Solutions, P.C. believes the standards require a person to check for the presence of voltage at this equipment before working on or applying LOTO. Therefore, this is considered "energized work", and the line / incoming side of this equipment will remain energized even if in the off position. Therefore, this will expose a worker to "energized parts" and should something happen to the worker and they were not wearing proper PPE as the device did not include an arc flash label, LCA would be liable.

F. Single phase equipment is not included in the survey, the analysis, results or labeling.

G. Coordination Meetings and Conference Calls: Current Solutions, P.C. principal shall arrange and participate in monthly conference calls to review the progress of the analysis including status of the facility and equipment surveys, power system modeling and development of the analysis report.

2. Equipment Data: Data for the analysis will be based on the results of the electrical equipment maintenance testing and the data for each equipment and device to be included in the test results.

3. Engineering Analysis: While the Arc Flash Analysis must be performed to determine the appropriate PPE required for personnel working near energized electrical equipment, conductors or circuits, a complete Short Circuit Study, Equipment and Device Evaluation Study, and Protective Device Coordination Study are performed first as part of the Arc Flash Analysis. Analysis methods shall conform to current NFPA 70E standards and IEEE-1584 guidelines. Where exact data cannot be obtained industry accepted assumptions will be made and documented in the analysis report.

4. Short Circuit Study: A Short Circuit Study will be performed that models the current that flows in the power system under abnormal conditions and determines the prospective fault currents at electrical equipment and compares those calculated values with the actual equipment ratings to determine if the equipment is properly rated.

5. Equipment and Device Evaluation Study: After the short circuit calculations are completed, an Equipment and Device Evaluation Study will be performed to evaluate the rating of equipment and devices for electrical faults at each piece of equipment included in the analysis model to verify the equipment ratings are adequate.

6. Protective Device Coordination Study: A Protective Device Coordination Study shall be performed to review and evaluate existing protective device settings to determine the adequacy of the existing equipment protection and minimize hazards to personnel while assuring the minimum portion of the power system is affected by a fault. This permits and maintains continuity of service to as large a portion of the system as possible. A Protective Device Coordination study shall be performed in order

to determine if the system protection characteristics are sufficient to provide reliable power to the facility. The Protective Device Coordination Study will also determine if the existing settings will provide proper personnel protection in the Arc Flash Analysis.

7. Arc Flash Analysis: The purpose of this analysis is to determine arc flash hazards and incident energy in conformance with NFPA-70E and the facility electrical safety program. The Arc Flash Analysis shall use the results from the Short Circuit Study and Protective Device Coordination Study to determine the incident energy, arc flash boundaries and shock hazard boundaries in accordance with NFPA-70E. The Arc Flash Analysis results and the labels applied to the equipment will be based on existing device settings and conditions.

8. Power Analysis and Equipment Evaluation Report: Current Solutions, P.C. shall develop a written Analysis and Evaluation Report specific to the facility electrical power distribution system that will include the following;

   A. Power analysis sections include short circuit study, equipment / device evaluation study protective device coordination study, and arc flash analysis.

   B. Report on the condition of the existing electrical equipment, opinion of estimated useful life remaining, based on the results of the equipment testing and the power system analysis.

   C. Provide recommendations for equipment repairs, replacement and schedule.

   D. Each recommendation will include an estimated construction, equipment costs and possible schedule of implementing the recommendation.

   E. Recommendations may also include if necessary new equipment location options including the staging of equipment removal and installation.

   F. Current Solutions, P.C. shall submit a Draft Report and Final Report.

9. Report Presentation: Current Solutions, P.C. shall conduct an online virtual meeting and presentation with Lehigh County Authority to review the Draft Report after submission. The presentation typically occurs two to four weeks after submission of the Draft Report.

10. Arc Flash Labeling: After the completion and acceptance of the Analysis Report Current Solutions, P.C. shall provide, and field apply arc flash hazard and shock hazard labels for each piece of equipment included in the analysis model. Labels shall be printed based on the data calculated. The labels shall be self-adhesive, approximately 4" x 6" with large print of ***"WARNING" or "DANGEROUS"*** at the top and be included for all equipment in the analysis.

Information Needed

Current Solutions, P.C. requires the following information to start the proposed engineering services:

1. Facility lock-out / tag-out procedure and policy manual.
2. Contact name and phone number of the representative at the utility company to confirm short circuit contribution from the utility company and over-current characteristics of the upstream over-current protective device.
3. Provide a summary of any and all induction motor HP and motor-based equipment / machines connected to the distribution equipment. Include the designation of the equipment that each of the motors is fed from.

Services Not Included

The following is excluded from the power system analysis:

1. The power system analysis and arc flash analysis will not be performed on any of the following systems or equipment:
    A. DC system or equipment
    B. Single phase loads or equipment.
2. Field service for start-up, testing, training or performing the actual protective device settings, adjustments, and minor modifications for conformance with the results of the proposed study.
3. Testing, calibrating, adjusting and setting of electrical equipment and/or protective devices.
4. Certification that the protective devices have been adjusted and set in accordance with the study.
5. Engineering design and system modifications to determine alternate approaches to effectively protect any under-rated equipment or any corrective modification that may be required.
6. Any other power system analysis, study, review or report.
7. Study or analysis software license or program analysis software data.

Deliverables

1. Submission of an electronic file in pdf format of the Draft Report.
2. Submission of an electronic file in pdf format of the completed Final Report.
3. Arc flash labels applied to the equipment.

PROPOSED FEES

Current Solutions, P.C. proposes to perform the above outlined Scope of Services as follows;

Task	Activity	Hours	Rate per Hour ($)	Fee ($)
Develop Electrical Equipment Maintenance Testing Scope	Pre-Scope Development Review	16	$225/hour	$3,600
	Power System Single Line Diagram	36	$225/hour	$8,100
	Testing Scope Document Development	62	$225/hour	$13,950
	Testing Activities Support	30	$225/hour	$6,750
	Testing Report Review & Summary	32	$225/hour	$7,200
Power System Analysis & Electrical Equipment Evaluation Report	Engineering Analysis & Evaluation Report	104	$225/hour	$23,400
	Arc Flash Labels & Label Application	40	$225/hour	$9,000
			Sub-Total	**$72,000**

Qualifications & Profile

EXECUTIVE SUMMARY

On behalf of Current Solutions, P.C. we would like to thank you for your interest in in company and specicliaed services. These qualifications and company profile includes information about our firm and our specialization for your review and consideration.

Our engineers listen! At Current Solutions, P.C. we foster an environment of communication and creativity that turns vision and ideas into tangible goals and programs. We perform the necessary in depth analysis to understand facility sites, systems and operations. This allows our firm be more responsive to the particular needs of the users which are also compatible with the facilities existing electrical infrastructure and assist those users to plan for future projects.

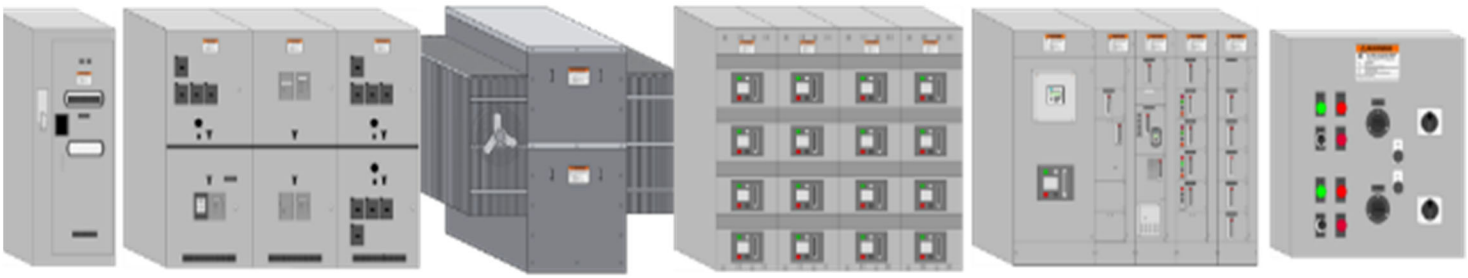
Current Solutions, P.C. specializes and has been engaged in electrical power system analysis and design services since the inception of the firm, to private and public entities, businesses, municipalities and federal agencies across the country. Our professional staff has provided these electrical engineering services and has gained a solid and reliable reputation for fulfilling similar programs within scheduled deadlines and budgetary constraints, and with consistent high levels of performance measured in over an 85% annual repeat business.

Organizationally, we all truly understand the importance of our client's needs, and we strive to provide outstanding service and build relationships in each and every new endeavor. Given the opportunity, we are confident that you will find our specialty electrical engineering services, valuable and cost efficient.

Speak to us regarding our many differentiators….

Current Solutions, P.C. performs all services in house by degreed engineers.

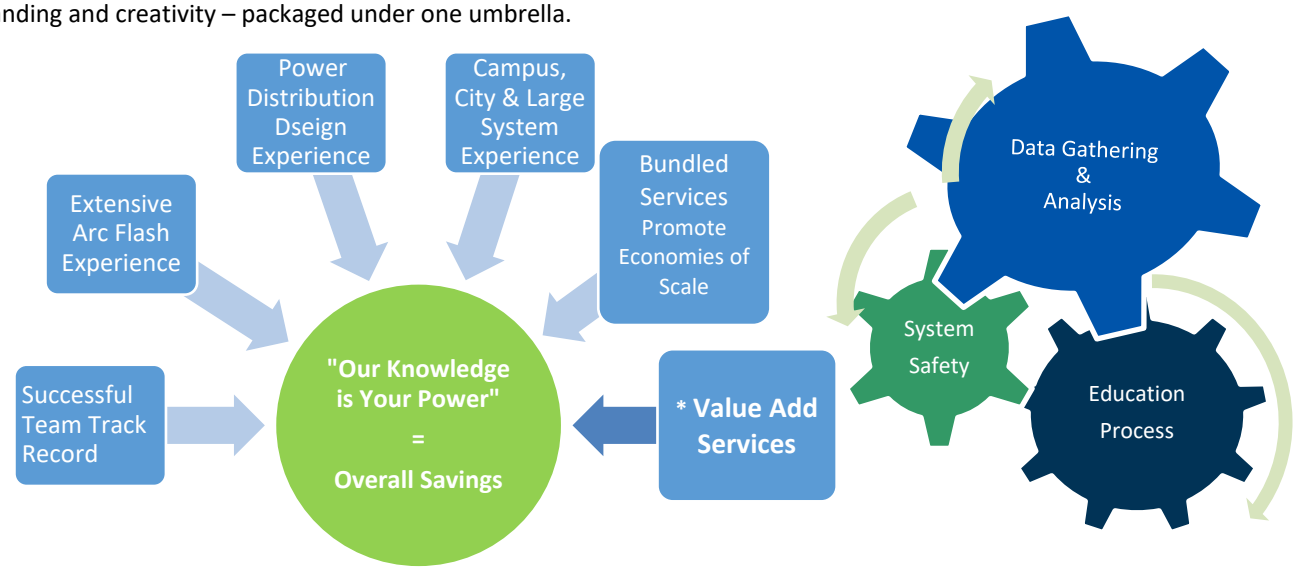
We do not sell equipment or PPE clothing. Our reports and results are not motivated by the sale of electrical equipment or arc flash attire/tools.



APPROACH

“Bundled Services Solution” for tangible accomplishments.

Our team fosters a highly specialized skills, commitment to excellence, seamless communication, mutual understanding and creativity – packaged under one umbrella.



VALUE ADDED SKILLS & SERVICES THAT IS PERFORMED BY THE SAME TEAM to help meet Performance Goals **for Collaboration, a Responsive Streamlined Process & Cost Efficiency**

Project Administration; Communication & Responsiveness; Quality, Scope, Budget and Schedule;

Organizationally, we all truly understand the importance of our clients needs, and we strive to provide outstanding service with added value while building relationships and confidence.

EXPERIENCE

Current Solutions Professional Engineering Estimating and Consulting, P.C. was established in 1998 and is headquartered in Westchester County, New York. The company is led by Mark B. Cavallaro, P.E., who has built a solid resume and reputation for specialty electric power distribution system services nationwide.

***Current Solutions** has significant experience with power systems up to 115 kV and with facilities of all sizes, such as campuses, and has performed arc flash and power systems design and analysis studies since 1998 throughout the U.S.*

The company philosophy is to understand our client's electrical power distribution system needs and to offer customized and specialized electrical engineering services, using highly skilled power system management and engineering personnel with experience on all types of facilities and clients.

The company's professional engineers work with power systems every day, from low-voltage to medium-voltage (up to 115 kV) and with electrical equipment by all industry manufacturers.

Since its inception, Current Solutions, P.C. has **successfully completed hundreds of electrical engineering projects**, including but not limited to the following: consulting, power system and arc flash analysis, power system design, construction administration, and training services. Our professional staff has extensive experience with facilities of all types including; universities, hospitals, city-wide projects, environmental facilities, and manufacturing plants.

We understand the key business drivers of clients and electric power distribution systems at many different levels – analysis, design, cost, reliability, human factors, construction conditions, maintenance, and safety. Our team has more engineers conducting electric power distribution system design and analysis studies on a daily basis than most other firms, and we utilize full licenses of industry-standard software (such as SKM, EasyPower, and ETAP).

Given its core technical competencies, extensive experience, and track record, Current Solutions has developed an industry-wide reputation as the "go-to" engineering firm for specialty electric power distribution system services and is committed to providing its clients with efficient, reliable, productive, scalable, and secure electric power distribution system infrastructure.

About Us

The distribution of electrical power, like the body's central nervous system, is the lifeline of any facility (or campus of facilities); and, just as with the systems of the human body, an understanding of the interrelationships between the various parts of the electric power distribution system is critical to facility operations.

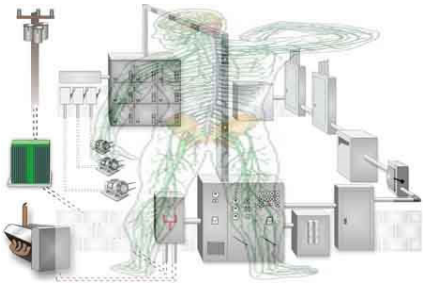
Operationally, the electric power distribution system is critical to the performance, efficiency, reliability, and safety of facility infrastructure.

Many challenges can impact the electric power distribution system, such as increased demand, guaranteed up-time and back-up power, utility deregulation, energy-efficient technology, renewable and sustainable energy technology, and regulatory compliance.

The Current Solutions team of electrical power engineering consultants has the expertise and experience to help our clients navigate through this maze of complexity.

We can troubleshoot, diagnose, recommend, and oversee the implementation of cost-effective solutions for issues plaguing an existing electric power distribution system or we can provide electrical system planning, design, and field support services for a major facility expansion. With Current Solutions, be rest assured that your electrical distribution system is in the hands of experts who 'get the job done and done right.'

Understanding the interrelationships between the various parts of the electric power distribution system is critical to the performance, efficiency, reliability, and safety of facility infrastructure.



Current Solutions, P.C.** is not affiliated with any manufacturer nor sells electrical equipment or PPE; thus, we serve as an independent consultant to our clients by offering unbiased, real-world electrical solutions based on engineered systems, **not product sales.

In summary, our clients can benefit from our breadth of highly-specialized electrical engineering capabilities and our depth of experience in the evaluation, development, expansion and enhancement of your electrical facilities infrastructure. We offer the complete range of services for these projects; and we regularly help owners evaluate the condition and usefulness of their existing electrical infrastructure to meet their needs. Repeat business is a true testimony to our success.

Unbiased Service to Facility Owners, Other Engineering Firms, Equipment Manufacturers & Suppliers, and Electrical Contractors

Current Solutions, P.C. performs services for owners and facility managers, top Fortune 100 and 500 firms, multidisciplinary engineering firms, international electrical equipment manufacturers, and electrical contractors throughout the U.S. Each has recognized and understood the value of Current Solutions specialized electrical engineering services.

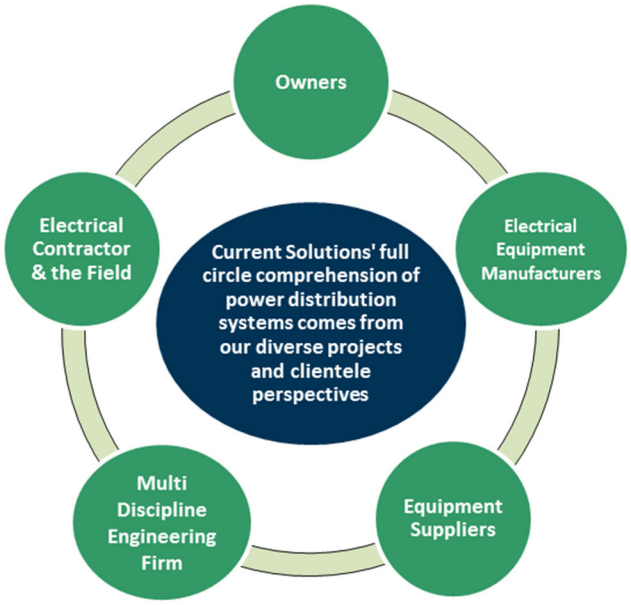
Current Solutions, P.C. *is well-versed in providing investigative power system analysis and conceptual planning services, design, cost estimating, and construction administration.*

We See the Whole Electric Power Distribution System Picture from Every Perspective

Current Solutions' engineers are trained and specialize in Electric Power Distribution System Engineering, and **we see the "Whole Electric Power Distribution System Picture" of a client's facility from every perspective** - from the perspective of the facility owner, to that of the design professional, to that of the electrical contractor.

We believe that our clients benefit from the value that Current Solutions, P.C. can provide by being a full-service electrical engineering company, because each of our engineers views the entire electrical power distribution system as a whole from every perspective.

Our Value: We offer a different perspective and approach from that of our competitors. Our understanding, experience, and perspective comes from working with and for all different types of clientele, each having their own unique electric power distribution system service needs and challenges.



Specialized Services

Our clients can benefit from our portfolio of highly specialized, electrical engineering capabilities and depth of experience all under one roof. Whether performing an evaluation, expansion, or enhancement of your existing electric power distribution system infrastructure, we offer the complete range of services to 'get the job done and done right.'

No Subcontractors

Current Solutions, P.C. adheres to the practice of utilizing the same team of engineers for start-to-finish implementation of services, in order to provide clarity in communication, continuity, and consistency to our clients. With specialized education and experience in electric power distribution systems, our engineers provide a level of competence not normally found from other engineers, data collectors, and professional trainers who do not routinely analyze and design electric power distribution systems.

Whether evaluating an existing electric power distribution system, or designing new equipment or an expansion to the system infrastructure, or providing consulting support for peer review or owner representative services, Current Solutions, P.C. seeks to develop and maintain a partnership with its clients at every stage of the project to satisfy client needs in a responsive and cost-effective manner.

Our large volume of repeat business is a testament to our success at developing a partnership with our clients.

Power Distribution System Analysis

Since the company's inception, Current Solutions, P.C. has performed all types of power system studies and has worked on every type of facility and electrical equipment. Being a specialty electrical engineering firm, Current Solutions has developed a reputation as the "go-to" engineering firm for specialty electric power distribution system services.

Current Solutions' engineers perform these services daily and have performed these services as standalone analysis or within a packaged scope of services. Services are performed for owners, other multidisciplinary engineering firms, international electrical equipment manufacturers, and electrical contractors across the nation.

All of the firm's engineers regularly perform analysis and design of electric power distribution system on a daily basis for facilities in every sector throughout the U.S.

The Current Solutions, P.C. team of electrical power engineering consultants has the education and experience to navigate electric power distribution systems of any complexity. We apply our background and experience to identify and diagnose ailments in existing electric power distribution system infrastructure or assist in designing an electric power distribution system to meet the critical requirements of our clients.

*We look to win **trust and long term working relationships** with our clients and to serve as the "go-to" resource for their electrical needs.*

We strive to reduce project costs, meet deadlines, and exceed expectations throughout every project phase, from planning through construction. We measure our successes through positive client feedback, repeat business, and solid client relationships.

Current Solutions P.C.'s Electrical Engineering & Power Distribution System Services		
Consulting Services Include:	**Engineering Design Services for Standby/Back-Up Power, Redundant Power and Co-Generation Systems Include:**	**Automation and Control Engineering Services Include:**

• Power System Analysis
  • Arc Flash Hazard Analysis
  • Short Circuit Calculations & Studies
  • Protective Device Coordination Studies
  • Power Quality & Harmonic Analysis
  • Load Flow Analysis
  • Motor Starting Analysis
  • Voltage Drop Analysis
  • Infrared Thermography
  • Power Factor Analysis
  • Project Feasibility Studies
  • Property & Equipment Conditions Reports
  • Generation & Emergency System Analysis
• Owners Representative
• Planning & Design (Field Surveys, As-built Drawings, Design Documents, Pre-construction Planning, Specification Development)
• Electrical Safety Programs
• Electrical Construction Cost Estimating
• Value Engineering
• Design Build
• Electrical Training
• Expert Witness Testimony
	• Electrical Engineering Design: Drawings, Specifications, Contract Administration
	• Low, Medium & High Voltage Power Distribution Systems Design (All types of Facilities including Substations)
	• Standby, Redundant and Emergency Power Systems
	• Disaster Recovery
	• Co-Generation
	• Relay Protection
	• Power Factor Corrective Design
	• Conceptual Design
	• Develop One Line Diagrams
	• Generator Sizing & Transfer Schemes
	• Drawings, Plans & Specifications for Contract Documents and Equipment Purchases
	• Power System Troubleshooting & Problem Resolution
	• Procurement of Permits & Code Compliance, Contract administration
	• Project Inspection
		• Instrumentation and Control
		• Facility Automation
		• Facility Start-Up and Testing
		• SCADA Systems Design
		
		Power System & Equipment Commissioning
		• Start Up Commissioning
		• Monitor & Witness Set-Up
		• Development of System Operating Procedures
		
		Electrical Construction Administration
		• Electrical Project Management
		• Facility Construction Start Up Activities
		• Equipment & Construction Specifications
		• Preparation & Evaluation of Bid Packages
		• Contractor Qualification & Solicitation
		• Shop Drawing Development & Review
		• Preparation & Coordination of As-built documents
		• Field Inspections for Applicable Codes & Standards
		• Constructability Reviews
		• Project Close Out Activities

Value Add

Highly Skilled Management – Professional Electrical Engineers, Master Electricians, PhD's, Trainers actively and directly involved in the Quality Control of the projects.

All of our engineers have regularly perform power system design and power system analysis on a daily basis for facilities in every sector throughout the U.S. since the inception of the company. Current Solutions, P.C. actively recruits engineers with both solid electrical engineering experience, specific to electric power distribution systems, as well as hands-on practical field experience.

Current Solutions P.C. acted as a consultant for the Port Authority of New York and New Jersey - one of the largest public transportation organizations in the world - for the entire PATH transportation system.

We Do Not Sell Products
As we are not affiliated with nor sell electrical or safety equipment, we remain an independent consultant, unbiased and offering real-world solutions based on engineered systems, not product sales.

Current Solutions Engineers Understand Power Systems ***All of our staff are degreed electrical engineers who have designed and studied electric power distribution systems and possess in-depth design and field experience.*** Our engineers understand all facets of facilities electric power distribution systems. Current Solutions, P.C. engineers understand and view electric power distribution systems at many different levels – from design and cost to overall safety. That gives our clients an advantage.

Because of Our Specialization, Other Engineering Firms, Equipment Manufacturers & Electrical Contractors Hire Us
Current Solutions, P.C. not only performs services for facility managers and owners but also for top Fortune 500, multidisciplinary engineering firms, international electrical equipment manufacturers, and electrical contractors throughout the U.S. - each recognizing and understanding the value of our specialized electrical engineering services.

Experience of Personnel

Current Solutions P.C. matches the needs of our Client for this important project.

The Current Solutions Team offers the complete in-house capabilities to meet all requirements for the Electrical Power distribution.

Current Solutions P.C. will provide **experienced, senior-level management professionals**, who are highly qualified to perform the scope of services required. Our proposed personnel are electrical specialists with vast experience in the design and analysis of all types of facilities of this type and size.

Electrical Differentiation

Organizational Capability

Our goal is to continue to demonstrate our dedication and commitment. We strive to differentiate our team by providing cutting edge and value added strategies that will not only maximize the quality output for each project but also seek out opportunities to provide added value and a customized level of client service.

Mark Cavallaro, P.E. & Master Electrician
President

Years of Experience
35+

Education
BSEE, Villanova University

Registration/Certification
Professional Engineer
States: NY, NJ, PA, CT, NC

Specialized Training & Certification
Master Electrician License

Professional Associations
Institute of Electrical and Electronics Engineers (IEEE)
National Society of Professional Engineers (NSPE)
International Association of Electrical Inspectors (IAEI)
Inter-National Electrical Testing Association (NETA)
National Fire Protection Association (NFPA)

Highlights
Adjunct Professor of Power Engineering at NYU Polytechnic

Featured author and speaker on electrical engineering and power distribution topics for industry

Mr. Cavallaro is the founder and President of Current Solutions, P.C. and has over 35 years of experience in the electrical industry. He has overseen and managed quality control for all electrical engineering analysis and design projects, **numbered in the hundreds**, since the firm's inception, and has been involved with the project management and quality control of for all of Current Solutions P.C. projects.

Mark Oversees and is involved with all projects for the company.

Mr. Cavallaro is both a Professional Engineer and Master Electrician with excellent managerial, communication and personal skills. Coupled with his certifications and licenses, he has solid "practical field experience" with large scale power distribution systems, installation, maintenance and testing of electrical equipment for Educational, Commercial, Industrial, Municipal and Institutional facilities and projects.

Mr. Cavallaro has held positions as the Director of Engineering for a large regional electrical contractor and Project Engineer for an international engineering firm. He has provided services to many engineering firms and electrical contractors nationwide, providing consulting, construction cost estimating, electrical engineering, power system analysis, technical support and training.

He has managed electrical engineering design and construction projects ranging in electrical construction cost from $50,000 to over $50 million, developed electrical cost estimating for projects to $60 million, and performed engineering and system analysis for diverse types of facilities including those over 1 million square feet and/or campuses to approximately 600 acres.

Mr. Cavallaro is a featured author and speaker on electrical engineering and electrical construction topics for many companies and industry associations; previously was an Adjunct Professor of Graduate Studies in Power Engineering for NYU Polytechnic University; and has served as an expert witness in litigation cases in the electrical industry.

Areas of Expertise

- Electrical Distribution System Design
- Power System Analysis and Studies
- Arc Flash Hazard Analysis
- Short Circuit Analysis
- Protective Device Coordination
- Protective Relaying
- Power Quality Assessments
- Mission Critical Electrical Systems
- Emergency / Standby Power Systems
- Co-generation Systems
- Electrical Safety
- Value Engineering
- Electrical Construction Management
- Electrical Cost Estimating
- On-Site Field Engineering
- Electrical Testing & Commissioning
- Electrical Construction Installation and Methods
- Expert Witness

Lehigh County Authority

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(610)398-2503 * FAX (610)398-8413 * Email: service@lehighcountyauthority.org

PROFESSIONAL SERVICES AUTHORIZATION

Professional: CURRENT SOLUTIONS
11220 Elm Lane
Charlotte, NC 28277
914-347-8480

Date: April 28, 2023
Requested By: Albert J. Capuzzi

Approvals
Department Head: _____
Chief Executive Officer: _____

Suburban Division: Electrical Assessment Study – Pretreatment Plant

In 2022, a Master Plan was completed for the Pretreatment Plant (PTP) in Fogelsville. The Master Plan, presented to the LCA Board in March 2023, described necessary capital improvements and sewer capacity expansion needs of the facility in order to continue treating current and future industrial wastewater in the western Lehigh County region. One of the Master Plan recommendations was to conduct a deeper review of the PTP's electrical facilities, which may be reaching the end of their useful life. The study will include coordination of electrical testing and review of results, completion of an arc flash study and labeling review, and development of recommendations regarding the replacement of electrical equipment. LCA's contract operator at the PTP, Jacobs, will coordinate with Current Solutions to complete the testing work.

Professional Services

1. Develop Testing Plan, Review Testing Proposal, Coordinate Testing, Review Testing Results. Jacobs will contract directly with the testing firm and coordinate their work at the PTP including required shutdowns
2. Complete Coordination Study
3. Complete Arc Flash Study and Labeling
4. Provide Recommended Improvements and Costs

Authorized Study Cost: $*72,000*

Study Completion Deadline: November 2023

(For Authority Use Only)

Authorization Completion:

Approval: _____ **Actual Cost:** _____ **Date:** _____

Lehigh County Authority – Monthly Report to Board of Directors

Upcoming Board Agenda Items & Project Updates – May 2023

Published: May 1, 2023

PART 1 – Upcoming Agenda Items – Action & Discussion Items

FINANCE & ADMINISTRATION

Project Title: Approval of Retention Agreement with Legal Counsel & Authorization to Initiate PFAS Litigation
Division / Funding: All Divisions
Board Action Date: 5/8/2023
Status or Action Desired: Approval
Project Phase: NEW

Project Notes: In March 2023, the U.S. Environmental Protection Agency issued a proposed new drinking water standard related to per- and polyfluoroalkyl substances, often referred to as "PFAS." As LCA continues to learn more about this proposed regulation and impacts on its water systems and customers, a time-sensitive decision must be made regarding pursuit of litigation against the manufacturers of these compounds. At the 5/8/2023 Board meeting, approval for the selection of legal counsel for this potential litigation will be requested. Staff Responsibility: Liesel Gross

Project Title: Monthly Financial Review
Division / Funding: n/a
Board Action Date: 5/22/2023
Status or Action Desired: Discussion
Project Phase: n/a

Project Notes: The April 2023 monthly financial report will be presented. Staff Responsibility: Ed Klein

SYSTEM OPERATIONS

Project Title: Monthly Operations Report
Division / Funding: n/a
Board Action Date: 5/22/2023
Status or Action Desired: Discussion
Project Phase: n/a

Project Notes: The April 2023 monthly operations report will be presented. Staff Responsibility: Andrew Moore & Chris Moughan

WATER PROJECTS

Project Title: Central Lehigh and North Whitehall Systems – Water Supply Study
Division / Funding: Suburban Division
Board Action Date: 5/22/2023
Status or Action Desired: Discussion
Project Phase: Planning Phase

Project Notes: This project involves the preparation of a water supply study (the "Study") to identify and evaluate feasible means to address current and long-term water supply needs in the Central Lehigh Division (CLD) and North Whitehall Division (NWD). Recently completed planning studies have identified the need for additional supply in these two systems. Authorization was granted at the February 14, 2022 Board meeting and the draft Study will be completed in the second quarter of 2023. From this study, additional engineering work will be initiated to develop water supply projects that enhance the region's water system resiliency and redundancy. This water supply study will serve as the backbone for the future development of a comprehensive Master Plan update for the entire LCA Suburban Division Water System. A presentation on the study's findings to date will be given at the May 22, 2023 Board Meeting. Staff Responsibility: Phil DePoe

WASTEWATER PROJECTS

Project Title: Regional Sewer Capacity & Wet-Weather Planning: Engineering & Program Support
Division / Funding: Suburban Division
Board Action Date: 5/8/2023
Status or Action Desired: Approval
Project Phase: Planning Phase

Project Notes: As defined at the November 8, 2021 Board meeting, consultants were assigned various roles for the region's Act 537 planning process. As program manager, AECOM is assisting LCA in numerous engineering and coordination tasks to help achieve the region's current DEP deadline for submission. These periodic authorization requests are an extension of ongoing engineering and program support that AECOM provided in 2013-2016 and 2019-2021. In addition to coordinating and evaluating the efforts of other consultants, AECOM will also focus on continued analysis of the Pretreatment Plant, regulatory review of the alternatives, and continued financial analysis through the cost-revenue benefit tool. Authorization approval of Professional Services Authorization for Act 537 Plan Program Management support in 2022 was granted at the 2/14/2022 Board meeting. A second authorization in 2022 was granted at the 6/27/2022 Board meeting. An additional authorization will be requested at 5/8/2023 Board meeting to bring further clarity to the recently authorized Final Alternatives Analysis (FAA) phase. AECOM will provide additional updates at this Board meeting. Staff Responsibility: Phil DePoe

Project Title: Pretreatment Plant (PTP) Electrical Study
Division / Funding: Suburban Division
Board Action Date: 5/8/2023
Status or Action Desired: Approval
Project Phase: Planning Phase

Project Notes: In 2022, a Master Plan was completed for the Pretreatment Plant (PTP) in Fogelsville. The Master Plan, presented to the LCA Board in March 2023, described necessary capital improvements and sewer capacity expansion needs of the facility in order to continue treating current and future industrial wastewater in the western Lehigh County region. One of the Master Plan recommendations was to conduct a deeper review of the PTP's electrical facilities, which may be reaching the end of their useful life. On 5/8/2023, Board authorization will be sought to begin this assessment using a consultant, Current Solutions. The study will include coordination of electrical testing and review of results, completion of an arc flash study and labeling review, and development of recommendations regarding the replacement of electrical equipment. LCA's contract operator at the PTP, Jacobs, will coordinate with Current Solutions to complete the testing work. Staff Responsibility: Albert Capuzzi

WATER PROJECTS – ALLENTOWN DIVISION

Project Title: Water Main Replacement Program Cycles 7 & 8
Division / Funding: Allentown Division
Board Action Date: n/a
Status or Action Desired: Updated
Project Phase: Design Phase

Project Notes: Through the Lease Agreement with the City of Allentown as amended in 2020, LCA is required to replace a total of four miles of water main during the period of 2021 through 2024. Approximately one mile of water main replacement was completed in 2021 and 2022, and cycles 7 and 8 will be scoped to satisfy the Lease requirement through 2024. This project will be funded by the LCA Allentown Division and has been approved by the City as a Major Capital Improvement. Approval for the Design Phase for Cycles 7 and 8 was granted at the 8/22/22 Board meeting. In the interest of optimizing project timing, construction of cycles 7 and 8 water main replacements will be combined into one project to be performed in 2024. Staff Responsibility: Jason Peters

PART 3 – Open Project List – No Updates

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Finance & Administration	LCA Strategic Plan - 2023 Quarterly Progress Reporting	All Divisions	n/a	Liesel Gross
Finance & Administration	Asset Management Roadmap & Strategic Asset Management Plan (SAMP)	All Divisions	Planning Phase	Albert Capuzzi
Finance & Administration	LCA Munis ERP System Planning & Re-Implementation	All Divisions	Planning Phase	Brooke Neve
System Operations	SmartBall Inspection - 30" and 36" Transmission Main - East Side	Allentown Division	Planning Phase	Chris Moughan
System Operations	Suburban Water Facilities - SCADA System Upgrade	Suburban Division	Construction Phase	Chris Moughan
System Operations	Watershed Monitoring Program	Suburban Division	Ongoing	Andrew Moore
Water - Suburban	2022 Commercial Meter Replacement Project	Suburban Division	Construction Phase	Amy Kunkel
Water - Suburban	Water Main Replacement Program Cycle 6	Suburban Division	Construction Phase	Jason Peters
Water - Suburban	Fixed Base Meter Reading Stations	Suburban Division	Planning Phase	Amy Kunkel
Water - Suburban	Upper System Pump Station and Main Extension	Suburban Division	Design Phase	Amy Kunkel
Water - Suburban	Water Main Replacement Program Cycle 7 and 8	Suburban Division	Design Phase	Jason Peters
Water - Allentown	Large Diameter Valve Rehabilitation & Replacement Program	Allentown Division	Design Phase	Chuck Volk
Water - Allentown	Lead Service Line Replacement Program Planning	Allentown Division	Planning Phase	Andrew Moore
Water - Allentown	Water Main Replacement Program Cycle 6	Allentown Division	Construction Phase	Jason Peters
Water - Allentown	Water Filtration Plant: Filter Upgrade Project	Allentown Division	Design Phase	Chuck Volk

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Water - Allentown	Water Filtration Plant: 2022-2023 Indenture Upgrades	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	Kline's Island WWTP - High-Rate Wet-Weather Treatment Pilot Study	Allentown Division	Planning Phase	Phil DePoe
Sewer - Act 537	KISS System Modeling - Final Alternatives Analysis (FAA)	City of Allentown (AO)	Planning Phase	Phil DePoe
Sewer - Act 537	KISS System Modeling - Preliminary Screening of Alternatives (PSOA)	City of Allentown (AO)	Planning Phase	Phil DePoe
Sewer - Act 537	Sanitary Sewer Collection System: City of Allentown Interceptor Inspections	City of Allentown (AO)	Planning Phase	Phil DePoe
Sewer - Act 537	KISS Act 537 Planning - Financial & Institutional Evaluation, Phase 1	City of Allentown (AO)	Planning Phase	Liesel Gross
Sewer - Act 537	Regional Sewer Capacity & Wet-Weather Planning - Regional Act 537 Plan Preparation	City of Allentown (AO)	Planning Phase	Phil DePoe
Sewer - Act 537	Kline's Island WWTP: Phase 1 AO Design Improvements	City of Allentown (AO)	On Hold	Phil DePoe
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	Industrial Pretreatment Plant Master Plan	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 and Force Main	Suburban Division	Design Phase	Amy Kunkel
Sewer - Act 537	Western Lehigh Service Area - Engineering & Program Support	Suburban Division	Planning Phase	Phil DePoe
Sewer - Suburban	Heidelberg Heights Sanitary Sewer Consent Order & Agreement	Suburban Division	Planning Phase	Chuck Volk
Sewer - Suburban	Heidelberg Heights Wastewater Treatment Plant - Mechanical Screen Project	Suburban Division	Construction Phase	Chuck Volk

Project Category	Project Title	Division / Funding	Project Phase	Staff Responsibility
Sewer - Suburban	Spring Creek Pump Station Upgrades	Suburban Division	Planning Phase	Amy Kunkel
Sewer - Suburban	Spring Creek Force Main Relocation - PA Turnpike Commission	Suburban Division	Design Phase	Amy Kunkel
Sewer - Suburban	Western Lehigh Manhole Rehabilitation Project - Phase 3	Suburban Division	Construction Phase	Jason Peters
Sewer - Suburban	Lynn Township Corrective Action Plan	Suburban Division	Ongoing	Jason Peters
Sewer - Suburban	Park Pump Station Phase 2 Upgrade	Suburban Division	Construction Phase	Amy Kunkel
Sewer - Allentown	Kline's Island WWTP: Primary Digester No. 2 Cleaning and Rehabilitation Project	Allentown Division	Construction Phase	Chuck Volk
Sewer - Allentown	Sanitary Sewer Collection System: I&I Source Reduction Program (LCA Year 1)	Allentown Division	Design Phase	Albert Capuzzi
Sewer - Allentown	Kline's Island WWTP: Substation No. 1 and Switchgear Replacement	Allentown Division	Design Phase	Chuck Volk
Sewer - Allentown	Kline's Island WWTP: Effluent Disinfection and Dechlorination System Improvements	Allentown Division	Construction Phase	Chuck Volk
Sewer - Allentown	Kline's Island WWTP: Solids Process Boiler and HVAC System Upgrade Project	Allentown Division	Construction Phase	Chuck Volk
Sewer - Allentown	Kline's Island WWTP: Wet Weather Capacity Enhancements	Allentown Division	Preliminary Design	Chuck Volk
Sewer - Allentown	Kline's Island WWTP: Main and Auxiliary Pump Station Improvements	Allentown Division	Preliminary Design	Chuck Volk
Sewer - Allentown	Kline's Island WWTP: Intermediate Pump Station Improvements	Allentown Division	Preliminary Design	Chuck Volk
Sewer - Allentown	Lehigh Street (Rte. 145) Water and Sewer Main Relocation Project	Allentown Division	Construction Phase	Jason Peters
Sewer - Allentown	Sanitary Sewer Collection System: I&I Source Reduction Program (City Year 4)	City of Allentown (AO)	Construction Phase	Phil DePoe