



LEHIGH COUNTY AUTHORITY

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

Agendas & Minutes Posted:
www.lehighcountyauthority.org

Published: March 21, 2022

BOARD MEETING AGENDA – March 28, 2022 – 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

- *March 14, 2022 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *2023-2027 Capital Plan - Suburban Division & Administration - Preliminary Plan Presentation (Discussion) (digital Board packet, pages 10-86)*

WATER

WASTEWATER

- *Allentown Division - Kline's Island Wastewater Treatment Plant – Primary Digester No.1 Cleaning (Approval) (digital Board packet, pages 87-89)*

6. Monthly Project Updates / Information Items (1st Board meeting per month)

7. Monthly Financial Review (2nd Board meeting per month) (digital Board packet, pages 90-101) – **February report attached**

8. Monthly System Operations Overview (2nd Board meeting per month) (digital Board packet, pages 102-106) – **February report attached**

9. Staff Comments

10. Solicitor's Comments
11. Public Comments / Other Comments
12. Executive Sessions
13. Adjournment

UPCOMING BOARD MEETINGS		
April 11, 2022	April 25, 2022	May 9, 2022

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

March 14, 2022

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:01 p.m. on Monday, March 14, 2022. 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, Richard Bohner, Norma Cusick, Ted Lyons, Kevin Baker, Jeff Morgan, and Amir Famili were present for the duration of the meeting.

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

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 to the agenda and no Executive Sessions planned.

APPROVAL OF MINUTES

February 28, 2022 Meeting Minutes

Richard Bohner noted some grammatical errors. On a motion by Richard Bohner, seconded by Ted Lyons, the Board approved the minutes of the February 28, 2022, Board meeting as corrected (6-0). Brian Nagle abstained.

PUBLIC COMMENTS

None.

ACTION AND DISCUSSION ITEMS

2022 Staffing Review & Budget Request

Liesel Gross explained that in the approved 2022 Budget, three new staff positions were added to address needs outlined in the Strategic Plan: Employee Development, Process Improvement, and Asset Management. When the 2022 Budget was approved by the Board on October 25, 2021, the Board asked for a refinement of the scope of work for the Process Improvement and Asset Management positions to be brought back to the Board.

The recommended approach for the Process Improvement position is to reallocate the budget for this position toward consulting services to assist the staff with conducting a needs analysis and developing a technology road map to address deficiencies with the Authority's financial software system. The consultant's work is expected to cost between \$50,000 and \$75,000, which represents

a reduction in the 2022 Budget when compared to the staff costs associated with a new Process Improvement position.

Scott Bieber entered the meeting at 12:10 p.m.

Liesel Gross then reviewed the Asset Management needs of the Authority, including reviewing the definition of Asset Management and the staff's assessment of initial steps that are necessary to develop the program. She noted that system maintenance and accurate tracking of maintenance activity are the building blocks of an asset management program. In order to place appropriate focus on maintenance activity tracking, the current staffing structure will be reorganized slightly and a maintenance-focused position added within the Plant Operations group. These changes will support standardization of maintenance programs across the organization.

Ted Lyons asked for a more detailed explanation of the standardization of maintenance activity and what is required. Ms. Gross reviewed the primary activities the new maintenance-focused position would be responsible for, including ensuring that the computerized maintenance management system is used consistently throughout the organization, developing an inventory system for materials and equipment, and gathering data on the condition of assets.

Ted Lyons asked if the Staff have chosen an organization to conduct the needs analysis regarding the financial system. Liesel Gross said proposals are expected to be received within the next few weeks following initial review of the project with three potential consultants.

Ms. Gross reviewed the current staffing structure, the recommended structure for 2022, and provided an overview of organizational changes that may be implemented in the future to fully support the Authority's asset management program. Amir Famili stated that the future Director of Engineering and Asset Management position noted in the presentation would serve a very critical role for the Authority and asked if the Board would be open to having the CEO start looking now to fill this position. He noted that the staffing change on the process improvement position will result in a net savings in 2022 for staffing, so there is some flexibility in the 2022 Budget to begin filling the Director of Engineering and Asset Management earlier. Jeff Morgan agreed that the position will be critical for the Authority and is needed. Liesel Gross said this position will be difficult to fill in the current job market and recognizing the qualifications and experience that would be required for this position. She stated the staff would like to focus on filling the maintenance-focused position first to ensure those priority areas are addressed. Recruiting for the Director of Engineering and Asset Management can begin after that.

Resolution 3-2022-1: Authorizing the Authority's Application for Grant Funding, Heidelberg Wastewater Rehabilitation Project

Chuck Volk explained that the purpose of proposed Resolution 3-2022-1 is to authorize a grant application to the Pennsylvania Local Share Assessment program for the 2023 Heidelberg Heights sewer main rehabilitation project. A copy of the draft Resolution was included in the Board's meeting packet. The project consists of replacing approximately 1,200 feet of sewer main and 14 sewer laterals.

Solicitor Mike Gaul read the title of Resolution 3-2022-1, and summarized the Resolution's provisions, including the nature of the project to be funded and the authorization of the grant application for the amount of \$455,000.00.

On a motion by Scott Bieber, seconded by Amir Famili, the Board approved Resolution 3-2022-1 (8-0).

A roll call vote was taken with the following votes cast:

Brian Nagle – yes
Scott Bieber – yes
Richard Bohner – yes
Norma Cusick – yes
Ted Lyons – yes
Kevin Baker – yes
Jeff Morgan – yes
Amir Famili – yes

Resolution 3-2022-2: Authorizing the Authority's Application for Grand Funding, Western Lehigh Interceptor Manhole Project

Chuck Volk explained that the purpose of proposed Resolution 3-2022-2 is to the authorize a grant application to the Pennsylvania Local Share Assessment program for the Western Lehigh Interceptor manhole rehabilitation project, which will flood proof approximately 130 manholes. A copy of the draft Resolution was included in the Board's meeting packet.

Solicitor Mike Gaul read the title of Resolution 3-2022-2, and summarized the Resolution's provisions, including the nature of the project to be funded and the authorization of the grant application for the amount of \$615,000.00.

On a motion by Ted Lyons, seconded by Amir Famili, the Board approved Resolution 3-2022-2 (8-0).

A roll call vote was taken with the following votes cast:

Brian Nagle – yes
Scott Bieber – yes
Richard Bohner – yes
Norma Cusick – yes
Ted Lyons – yes
Kevin Baker – yes
Jeff Morgan – yes
Amir Famili – yes

The Board suggested reaching out to local legislators for support of the two grant applications that were just approved. Liesel Gross said this legislative outreach will be completed following submission of the applications.

Kline's Island Sewer System –Act 537 Planning Update

Phil DePoe reviewed a detailed PowerPoint presentation regarding the Kline's Island Sewer System (KISS) Act 537 Plan, including a review of the project history and timeline, review of critical path items, and review of past and current consultant authorizations. This review covered the time period of late 2018 through 2022, including future work necessary to achieve the goal of submitting the Act 537 Plan to the Pa. Department of Environmental Protection (DEP) by March 2025.

Mr. DePoe explained that the Task Activity Report (TAR), which was requested by the Board at the previous meeting, is the DEP form used to outline the expenses that will be incurred to prepare the eight required sections of the Plan. All 15 KISS municipalities must sign the TAR to show their commitment to the planning effort and cost. Mr. DePoe said the work is continuing on schedule to meet the 2025 submission deadline, but the next three years will be challenging due to the amount of work that must be completed and the need to reach agreement with all municipalities on the long-term sewage facilities plan. Mr. DePoe outlined the planning schedule and reviewed the critical path items required to meet the schedule.

Ted Lyons asked what alternatives are being explored to address long-term sewage capacity needs in this region. Mr. DePoe outlined three major components of the system that are being investigated: the Authority's Pretreatment Plant (PTP) upgrade option; the Kline's Island Wastewater Treatment Plant (KIWWTP) upgrades to address dry-day and wet-weather flows; and the conveyance system including interceptors and pump stations. He noted that the plan must include not only the new facilities that are required to meet future needs, but also any major facility upgrades that are needed due to aging infrastructure or updated treatment requirements. The plan must also include a review of each municipality's sewer collection system rehabilitation programs. A major challenge with the schedule is the need for the municipalities to agree on the entire plan, which will be very expensive to implement.

Scott Bieber asked Phil DePoe to expand on the challenges associated with the allocation of sewage capacity to the signatories. DePoe explained that the current KIWWTP permit is for 40 million gallons per day (MGD), which is already fully allocated to the KISS municipalities. However, the KIWWTP average daily flows are only 32 MGD, and sometimes less during periods of low groundwater. Therefore, the plant may not need to be upgraded to provide more dry-day treatment capacity. However, some of the municipalities may need more allocation to accommodate future growth. Liesel Gross explained that since the entire 40 MGD is already allocated to the municipalities, there is no capacity available for the municipalities to purchase. This problem is based on the intermunicipal agreements, which will need to be renegotiated as part of this planning process. This negotiation process is a major driver in the planning schedule because it is expected this process will take a long time to work through with all of the municipalities.

Jeff Morgan asked about the status of the KIWWTP permit, which was recently re-rated to increase the hydraulic capacity of the plant. Mr. DePoe explained that the hydraulic capacity of the plan was recently re-rated to 44.6 MGD, but this may not provide any additional sewer allocation for the municipalities to purchase. Scott Bieber asked for additional explanation, and Mr. DePoe said the situation is unclear and requires more dialog with DEP. The increase in the hydraulic capacity rating of the KIWWTP to 44.6 MGD provides a cushion for periods of prolonged wet weather, such as what was experienced in 2018 and 2019, but it is unclear what this permit upgrade means for normal sewer capacity allocation process.

Scott Bieber asked if the Board could see a status report of the current DEP-issued Connection Management Plan, to see which municipalities are adding new connections to the system. Mr. DePoe said a quarterly report is prepared for DEP detailing new connections that are approved within the terms of the Connection Management Plan, and future reports could be shared with the Board. Jeff Morgan asked if new connections are allowed based on reductions in inflow and infiltration (I&I) within each municipality. Liesel Gross explained that beginning in 2020, DEP placed the KISS under a Connection Management Plan with a specific amount of new flow approved to be connected to the system during this planning period which ends in 2025. The amount of new flow included in the Connection Management Plan is based on what each KISS municipality predicted for new growth during the five-year period, not I&I reductions. However, if a municipality's growth

exceeds its approved Connection Management Plan before 2025, a request could be made to DEP for additional new connections based on progress on I&I reduction or other flow reductions. If the region continues to make good progress on the planning effort and submits the Act 537 Plan on time, then it is expected new connections will be allowed to continue after 2025 based on implementation of the Plan.

Mr. DePoe reviewed the past and current authorizations of the five consultants: AECOM, ARRO, Arcadis, Jacobs, and Kleinfelder. Amir Famili asked who is ultimately responsible for this project, and who makes the decision on which alternatives will be pursued or discarded from the evaluation. Mr. DePoe explained that he is responsible for moving the work forward, ensuring the consultants are progressing on schedule, and coordinating technical work with the KISS municipalities. Liesel Gross stated that the challenge with this program is that all 15 municipalities ultimately have a say in what is included in the plan, and all municipalities must adopt it by resolution. The Authority is facilitating the work, but the planning costs are shared by the municipalities. Ted Lyons asked if the municipalities are supportive of the process. Ms. Gross said the municipalities are participating in the process and attending a lot of meetings together. However, there are differing opinions on progress on the project to date, with some municipalities becoming impatient with the slower pace of planning. Other municipalities do not feel the planning effort will benefit their community. She commented that bringing all the municipalities together to agree on the final Act 537 Plan and long-term sewage facilities that will be constructed will be the hardest part of the planning effort. Mr. DePoe agreed and stated that the engineering work is the more straightforward aspect of the planning effort.

The Board thanked Mr. DePoe for the presentation and discussion.

Western Lehigh Service Area: 2022 Nighttime Weiring

Linda Rosenfeld entered the meeting at 1:28 p.m.

Phil DePoe provided some background to the project, describing previous investigations to identify the sources of inflow and infiltration (I&I) into the Western Lehigh Interceptor system and associated municipal sewer collection systems. Past studies have indicated where baseline infiltration and rainfall derived inflow and infiltration (RDII) exist within the system. The Western Lehigh Sewer Partner municipalities and the Authority have completed system rehabilitation over the past decade to address these sources of I&I. An updated RDII analysis was completed recently. Updated I&I source reduction plans must be developed as part of the regional Act 537 planning work. When properly conducted with wet ground conditions that typically occur in the early spring months, nighttime weiring is a highly effective way to locate those neighborhoods most impacted by I&I, so the future system rehabilitation program can be developed. The work will consist of evaluating approximately 240 miles of sanitary sewer pipe located primarily within the Western Lehigh Sewer Partners' sewer collection systems. In addition to the project authorization, Mr. DePoe noted a Budget Amendment was also being requested for approval, as this work was not initially expected to be conducted via the Authority's budget. The work will be facilitated by the Authority, with expenses reimbursed by the municipalities through normal sewer signatory billing procedures.

There was some additional discussion of methods for identifying the sources of I&I including televising the sewer system and micro-metering. Jeff Morgan commented that this is a worthwhile effort, and the nighttime weiring process offers the potential to identify infiltration sources behind the curb as well, such as leaking laterals and sump pumps.

On a motion by Jeff Morgan, seconded by Ted Lyons, the Board approved the Capital Project Authorization in the Suburban Division Western Lehigh Sewer Partners – Nighttime Weiring in the

amount of \$298,000.00 which includes the Professional Services Authorization to Arcadis in the amount of \$268,000.00 and includes the Budget Amendment Request in the amount of \$298,000.00 for the Suburban Division Wastewater Capital budget (9-0).

A roll call vote was taken with the following votes cast:

Brian Nagle – yes
Scott Bieber – yes
Richard Bohner – yes
Norma Cusick – yes
Ted Lyons – yes
Kevin Baker – yes
Linda Rosenfeld – yes
Jeff Morgan – yes
Amir Famili – yes

Allentown Division - Sanitary Sewer Collection System: I&I Source Reduction Program Plan

Phil DePoe reviewed the project, which is part of a three-year source reduction plan in the City of Allentown to reduce baseline infiltration. The plan includes heavy cleaning, joint testing and grout sealing, sectional and full-length cured-in-place-pipelining (CIPP). Kleinfelder, the Authority's engineering consultant for this project, has checked references of the low bidder, Vortex Services, LLC and has found their work to be satisfactory.

On a motion by Amir Famili, seconded by Linda Rosenfeld, the Board approved the Capital Project Authorization for the Construction Phase in the amount of \$945,772.00 which includes the Professional Services Authorization to Kleinfelder in the amount of \$162,200.00 and the Construction Contract to Vortex Services, LLC in the amount of \$753,572.00 (9-0).

A roll call vote was taken with the following votes cast:

Brian Nagle – yes
Scott Bieber – yes
Richard Bohner – yes
Norma Cusick – yes
Ted Lyons – yes
Kevin Baker – yes
Linda Rosenfeld – yes
Jeff Morgan – yes
Amir Famili – yes

MONTHLY PROJECT UPDATES / INFORMATION ITEMS

Liesel Gross reported that there have been additional format changes made to the report that include the notation of staff responsibility for each project, the project phase, and the funding source. She reviewed upcoming agenda items noted in the report. Chairman Nagle thanked the Staff for the updates to the report format, which make it easier to review.

STAFF COMMENTS

None.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

EXECUTIVE SESSION

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 1:47 p.m.

Richard Bohner
Secretary



LEHIGH COUNTY AUTHORITY
ALLENTOWN, PA

DRAFT 5-YEAR CAPITAL PLAN

SUBURBAN DIVISION

2023-2027

MARCH 2022

**LEHIGH COUNTY AUTHORITY
5-YEAR CAPITAL PLAN
2023-2027**

TABLE OF CONTENTS

	Page
Glossary of Acronyms & Terms	1-2
 Water	
Capital Financing Justification	3-4
Department Summary	5
Project Details	6-17
 Wastewater	
Capital Financing Justification	18-19
Department Summary	20
Project Details	21-52

2023-2027 Capital Plan

Glossary of Acronyms & Terms

The following is a listing of acronyms and terms used in the Capital Plan Summary and Project Detail Sheets.

LCA Water and/or Wastewater Divisions/Systems

LCA Water and/or Wastewater Divisions/Systems			
		Water	Wastewater
<i>AD</i>	Allentown Division	X	X
<i>AWD</i>	Arcadia West Division	X	X
<i>BHD</i>	Beverly Hills Division	X	
<i>CLD</i>	Central Lehigh Division	X	
<i>CFD</i>	Clear View Farms Division	X	
<i>ECD</i>	Emmaus Consecutive Division	X	
<i>HHD</i>	Heidelberg Heights Division	X	X
<i>LLRI-1</i>	Little Lehigh Relief Interceptor, Phase 1		X
<i>LLRI-2</i>	Little Lehigh Relief Interceptor, Phase 2		X
<i>LTD</i>	Lynn Township Division		X
<i>MCD</i>	Mill Creek Division	X	
<i>MND</i>	Madison Park Division	X	
<i>NWD</i>	North Whitehall Division	X	
<i>PLD</i>	Pine Lakes Division	X	
<i>SSD</i>	Sands Spring Division		X
<i>UMD</i>	Upper Milford Division	X	X
<i>UMCD</i>	Upper Central Milford Division (Buss Acres)	X	
<i>WLI</i>	Western Lehigh Interceptor		X
<i>WTD</i>	Washington Township Division	X	X
<i>WWD</i>	Wynnewood Division		X

Project Type

Project Type	Description
<i>AO</i>	Administrative Order
<i>UW</i>	Uncompleted Work ⁽¹⁾
<i>S-7-MCI</i>	Schedule-7 (<i>Lease Required</i>) Major Capital Improvement ⁽²⁾
<i>LCA-MCI</i>	LCA Developed Major Capital Improvement ⁽²⁾
<i>COL</i>	Change of Law ⁽³⁾
<i>Regular</i>	A project that does not fit in any of the aforementioned special categories

(1) *Uncompleted Work: City Projects that were supposed to be complete by the time of settlement. The City and LCA have reached an agreement for LCA to execute them.*

(2) *Major Capital Improvement: In accordance with the Lease, all Major Capital Improvements must be approved by the City.*

(3) *Change of Law: In accordance with the Change of Law Memorandum of Understanding*

Project Funding

Project Funding	Description
<i>LCA</i>	Funded by LCA
<i>100% Reimb</i>	All costs are 100% reimbursable by fees charged
<i>Fees & LCA</i>	Costs partly recovered through fees charged and partly funded by LCA
<i>Allentown</i>	Funded by the City of Allentown
<i>CCRC</i>	Capital Cost Recovery Charge ⁽¹⁾ ; Applies only to City approved MCI

(1) Capital Cost Recovery Charge: An on-going user fee that is above the rate caps set forth in the Lease to allow the recovery of the cost of an MCI. Rate payers are charged based upon usage.

Project Category

Projects have been categorized to identify the primary and secondary reasons for the need. In some cases there is no secondary reason that would be applicable.

Project Category	Description
<i>Regulatory</i>	Required to meet Regulatory requirements
<i>New Cust</i>	New Customers
<i>CA/OS</i>	Concession Lease/Operating Standards
<i>Master Plan</i>	Master Plan
<i>AM - Low</i>	Asset Management - Low Risk
<i>AM - Med</i>	Asset Management - Medium Risk
<i>AM - High</i>	Asset Management - High Risk
<i>AM - Varies</i>	Asset Management - Varies ⁽¹⁾
<i>Efficiency</i>	Efficiency
<i>Sys Imp</i>	System Improvement
<i>Rev Opprt</i>	Revenue Opportunity
<i>Planning</i>	Planning
<i>N/A</i>	Not Applicable

(1) Applies to Asset Management Projects, where there are multiple standalone sub-projects of varied levels of "risk".

Approval Stage

Approval Stage	Description
<i>A</i>	Annual Project, no approvals required
<i>S</i>	Study/Planning Phase
<i>D</i>	Design Phase
<i>C</i>	Construction/Implementation Phase
<i>E</i>	Entire Project
<i>V</i>	Various Phases
<i>P</i>	Pending Board approval

WATER

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
WATER
5-YEAR CAPITAL PLAN
2023–2027**

CAPITAL FINANCING JUSTIFICATION

Capital additions to the Water System are justified by using six revenue sources: user charges, assessments or distribution tapping fees, supply tapping fees, contributions-in-aid of construction, reimbursements from the wastewater funds and grants. This would comprise the amount of cash available from operations for capital projects.

Beyond the operating cash available, remaining sources are project reserves from previous debt issuance and any new borrowing required.

The table below summarizes the capital project sourcing by year and each major financial sourcing category:

CAPITAL FINANCING SOURCES						
	2022	2023	2024	2025	2026	TOTAL
Project Costs	\$4,227,000	\$3,780,000	\$5,730,000	\$3,560,000	\$3,400,000	\$20,697,000
<i>Sources of Funding:</i>						
Current Cash Flows	\$1,377,000	\$3,355,000	\$5,730,000	\$3,560,000	\$3,400,000	\$17,422,000
Cash Reserves	\$25,000	-	-	-	-	\$25,000
New Borrowing	\$2,825,000	\$425,000	-	-	-	\$3,250,000
TOTAL FUNDING	\$6,297,000	\$4,481,500	\$3,850,000	\$5,692,000	\$3,650,000	\$20,697,000

Total spending on capital projects for the five-year period totals \$20,697,000. Current cash flows and cash reserves over the period will provide \$17,422,000 for capital projects. New borrowing for plan period projects in the amount of \$3,250,000 that will take place in year 2022 will provide the remaining funding required.

The \$3,250,000 borrowing is to fund non-annual projects in years 1,2, and 3 of the plan period. To support the additional debt service worth \$294,000 annually on the \$3,250,000 borrowing along with \$3,325,000 being borrowed in 2021 and annual inflation on operating expenses, a revenue increase of 5.00% each year will be required.

CONDENSED CASH FLOW - SUBURBAN WATER

US DOLLARS	2023	2024	2025	2026	2027
User Charges	16,046,604	16,848,934	17,691,381	18,575,950	19,504,748
Other Operating Revenues	38,724	38,724	38,724	38,724	38,724
Non-Operating Revenues	1,016,681	1,016,681	1,016,681	1,016,681	1,016,681
Operating expenses	(10,029,130)	(10,630,343)	(10,934,412)	(11,246,513)	(11,568,829)
Debt Service - Current Debt	(3,056,164)	(3,130,714)	(3,117,714)	(3,128,964)	(2,799,714)
Debt Service - NEW Debt	(293,573)	(293,573)	(293,573)	(293,573)	(293,573)
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex	(4,684,500)	(4,211,250)	(6,030,000)	(3,628,750)	(3,462,500)
NET FUND FLOWS	(961,358)	(361,541)	(1,628,913)	1,333,555	2,435,537
Plan Volume Increase %	2.00%	2.00%	2.00%	2.00%	2.00%
User Charge Rate Increase %	3.00%	3.00%	3.00%	3.00%	3.00%
Total User Charge Revenue Increase	5.00%	5.00%	5.00%	5.00%	5.00%
Unrestricted Cash Balance	7,619,069	7,257,528	5,628,614	6,962,169	9,397,706
Unrestricted Investments	2,975,123	2,975,123	2,975,123	2,975,123	2,975,123
Total Unrestricted Balances	10,594,192	10,232,651	8,603,737	9,937,292	12,372,829
Days on Hand	277	249	188	226	297
DEBT SERVICE COVERAGE RATIO	2.11	2.12	2.29	2.45	2.91

LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
2023-2027 CAPITAL PROGRAM
WATER

Project #	Name or Title of Proposal	Proj. Category	(1) Proj. Funding	Approval Stage (1)	Plan Total Cost*	This Capital Program							Prior Project Cost (2)	Future Project Cost (2)	Total Project Cost
						2022 Budget Approved	2023 Year 1	2024 Year 2	2025 Year 3	2026 Year 4	2027 Year 5	2023-2027 Total			
SD-W-A	Annual Projects	AM - Varies	LCA	A	\$ 5,292,000	\$ 665,000	\$ 1,402,000	\$ 825,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 4,627,000	\$ -	\$ -	\$5,292,000
SD-W-12	Water Main Replacement Projects	AM - Varies	LCA	V	\$ 4,800,000	\$ 2,400,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,600,000	\$ 2,600,000	\$ 2,400,000	\$ -	\$ -	\$4,800,000
SD-W-50	Fixed Base Meter Reading System	Sys Imp	LCA	P	\$ 1,010,000	\$ 100,000	\$ 100,000	\$ 350,000	\$ 400,000	\$ 60,000	\$ -	\$ 910,000	\$ 45,000	\$ -	\$1,055,000
SD-W-55	Water Systems Master Planning	Sys Imp	LCA	A	\$ 275,000	\$ 100,000	\$ 100,000	\$ 75,000	\$ -	\$ -	\$ -	\$ 175,000	\$ -	\$ -	\$275,000
SD-W-56	Upper System Pump Station & Water Main Extension	Sys Imp	LCA	A	\$ 250,000	\$ 200,000	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ 60,000	\$ -	\$310,000
SD-W-57	Water Meter Replacement Program	AM-Med	LCA	P	\$ 2,660,000	450,000	50,000	30,000	2,030,000	100,000	-	2,210,000			\$2,660,000
	GRAND TOTAL				\$ 14,287,000	\$ 3,915,000	\$ 4,202,000	\$ 3,780,000	\$ 5,730,000	\$ 3,560,000	\$ 3,400,000	\$ 10,372,000	\$ 105,000	\$ -	\$ 14,392,000

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents. All projects are LCA funded
(2) If blank , cost is not applicable (annual project) or to be determined

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	ANNUAL PROJECTS						
Budget Area	Water	Department	Capital Works	Date	1/21/2022	Project No.	SD-W-A
Location	All LCA Suburban Divisions, Multiple Municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Efficiency	Preparer		CEV

Purpose of Expenditure (check all that apply)			
<input checked="" type="checkbox"/>	New Facility		Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/>	Equipment Obsolete
	Scheduled Replacement		Comply with Regulatory Requirements
	Improved Service	<input checked="" type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
	Study		Other (explain):

Additional Information			
Expected Useful Life (Years)	N/A	Project inception date	N/A
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	N/A
Will the Project Require Obtaining Land Rights	N/A		
Varies by system.			

Detailed Project Description
This consolidated annual project is a collection of separate recurring small projects. This annual project includes the following: New Water Main Installation, Distribution Mains - Development & Service Connections, Distribution Mains - Upsizing/Contribution, Reservoir Rehabilitation/Maintenance, Water Company Acquisitions, Main Office/Operations Center Improvements, Mobile Equipment, Other Equipment, General Water System Improvements, Water Facilities Asset Management Improvements and New and Replacement Water Meters.

Project Drivers and Needs to be Met by the Project
The primary drivers for these projects are asset management, operational efficiency and revenue generation. Annual items help maintain the operation and satisfactory level of service for existing water supply, distribution, and support facilities in the Suburban Division, and accommodate water distribution needs due to growth.

Project Status - Describe what work, if any has been completed or underway for this project
This is an annual project, therefore, work is on-going.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-A
Project Name	ANNUAL PROJECTS

Prior Project Cost	N/A
Estimated Project Costs:	2022-2027
LCA Staff	\$ 500,000
Land Acquisition	\$ -
Construction/Equipment	\$ 4,142,000
Professional Services	\$ 400,000
Other	\$ 50,000
Contingencies	\$ 200,000
Total Project Cost	\$ 5,292,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 4,627,000
--	---------------------

	Need	Phase of Work
2022 Budget	\$ 665,000	service contract, planning, design & construction
1st Year 2023	\$ 1,402,000	service contract, planning, design & construction
2nd Year 2024	\$ 825,000	service contract, planning, design & construction
3rd Year 2025	\$ 800,000	service contract, planning, design & construction
4th Year 2026	\$ 800,000	service contract, planning, design & construction
5th Year 2027	\$ 800,000	service contract, planning, design & construction

--

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WATER MAIN REPLACEMENT PROJECTS						
Budget Area	Water	Department	Capital Works	Date	1/21/2022	Project No.	SD-W-12
Location	Various LCA Divisions located in multiple municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Efficiency	Preparer		JMP

Purpose of Expenditure (check all that apply)	
<input checked="" type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/> Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	N/A
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	N/A
Will the Project Require Obtaining Land Rights	No		
Varies by system - Main Replacements are located in multiple systems.			

Detailed Project Description
<p>This project entails replacement of aging cast iron (CI) water mains in LCA Central Lehigh and satellite water systems. Scope of work is prioritized based on break history, geology (sinkholes), pipe condition, pipe age, and probability and consequence of failure. The Capital Plan reflects the replacement of approximately one-mile of water main per year, per annual prioritization efforts. Annual funding is provided in the Capital Plan for replacing mains that exhibit high failure rates.</p>

Project Drivers and Needs to be Met by the Project
<p>Replacing CI mains will reduce the frequency of breaks in the system thereby saving the Authority repair costs, customer outages and reducing the potential for damage which can occur to private property.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>This is an annual project, therefore, work is on-going.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
<p>Replacement of aged cast iron mains will reduce the number of main breaks, thereby saving repair costs and reducing the possibility of ground subsidence and property damage. Exact savings to be determined.</p>

Project No.	SD-W-12
Project Name	WATER MAIN REPLACEMENT PROJECTS

Prior Project Cost	N/A
Estimated Project Costs:	2022-2027
LCA Staff	\$ 580,000
Land Acquisition	\$ -
Construction/Equipment	\$ 12,500,000
Professional Services	\$ 1,400,000
Other	\$ 20,000
Contingencies	\$ 600,000
Total Project Cost	\$ 15,100,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 12,700,000
--	----------------------

		Need	Phase of Work
	2022 Budget	\$ 2,400,000	design & construction
1st Year	2023	\$ 2,500,000	design & construction
2nd Year	2024	\$ 2,500,000	design & construction
3rd Year	2025	\$ 2,500,000	design & construction
4th Year	2026	\$ 2,600,000	design & construction
5th Year	2027	\$ 2,600,000	design & construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	FIXED BASE METER READING SYSTEM						
Budget Area	Water	Department	Capital Works	Date	1/21/2022	Project No.	SD-W-50
Location	CLD			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		ALK

Purpose of Expenditure (check all that apply)		
<input checked="" type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2019
Approx. No. of Customers Benefitted	19,000		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	TBD		

Detailed Project Description
Development of a fixed base system for meter reading. A communication study by Sensus to evaluate the number and location of antenna towers for Suburban area coverage was performed in 2019 and updates to the study are performed as site locations are refined. Eight antennas are anticipated in order to provide adequate coverage of the Suburban system.

Project Drivers and Needs to be Met by the Project
The new system will allow for more efficient meter reading, consistent billing and faster dispute resolution. As meters are upgraded, the AMI system will allow us to monitor customer usage in real time and proactively address problems.

Project Status - Describe what work, if any has been completed or underway for this project
The radio transceiver units were upgraded in 2019/2020 and are now compatible with an AMI system. An Engineer was retained to optimize site locations to better refine installation costs. In 2022 a temporary tower/base station will be erected at two locations to demonstrate the capabilities of the system. Following an internal cost/benefit analysis, an engineer will prepare site plans and facilitate Township approvals for the antenna sites.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Project to commence in 2020.

Project No.	SD-W-50
Project Name	FIXED BASE METER READING SYSTEM

Prior Project Cost	\$ 45,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 50,000
Land Acquisition	\$ 50,000
Construction/Equipment	\$ 700,000
Professional Services	\$ 140,000
Other	\$ 10,000
Contingencies	\$ 60,000
Total Project Cost	\$ 1,055,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 910,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 100,000	Planning
1st Year	2023	\$ 100,000	Design
2nd Year	2024	\$ 350,000	Construction
3rd Year	2025	\$ 400,000	Construction
4th Year	2026	\$ 60,000	Construction
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WATER SYSTEMS MASTER PLANNING						
Budget Area	Water	Department	Capital Works	Date	1/21/2022	Project No.	SD-W-55
Location	CLD			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Regulatory	Preparer		PD/AK

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input type="checkbox"/>	Improved Service	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/>	Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2022
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2024
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This project involves the preparation of a preliminary water supply study for two major Suburban Water Systems. (Central Lehigh and North Whitehall Division). The study will review supply capacity requirements to meet current and future demands, and evaluate existing water sources, storage, and interconnections to ensure long-term supply needs can be met. 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 future development of a Master Plan for the entire LCA Suburban Water System.</p>

Project Drivers and Needs to be Met by the Project
<p>The study aligns with LCA's Strategic Plan to identify and evaluate feasible means to address current and long-term water supply needs in the CLD and NWD. The study will identify potential additional sources to supplement flow should water demand increase due to development in the Western Lehigh service area or a potential large industrial user. The study will provide information which will allow us to prioritize and budget for the addition of the wells as sources of supply.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>An Engineering consultant has been retained to complete the first phase of the study in 2022. Additional studies or capital projects recommended in the study are to be determined.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-55
Project Name	WATER SYSTEMS MASTER PLANNING

Prior Project Cost	\$ -
Estimated Project Costs:	2022-2027
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 140,000
Other	\$ -
Contingencies	\$ 30,000
Total Project Cost	\$ 200,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 175,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 100,000	Study
1st Year	2023	\$ 100,000	Study
2nd Year	2024	\$ 75,000	Study
3rd Year	2025	\$ -	
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	UPPER SYSTEM PUMP STATION AND WATER MAIN EXTENSION						
Budget Area	Water	Department	Capital Works	Date	1/27/2022	Project No.	SD-W-56
Location	CLD			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		ELH

Purpose of Expenditure (check all that apply)		
<input checked="" type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	Other (explain): Provide capacity for future growth

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2018
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	TBD
Will the Project Require Obtaining Land Rights	Yes		

Detailed Project Description
The project consists of improvements to LCA's Western Lehigh water distribution system ("CLD Upper System") that is located north of I-78 and west of the village of Fogelsville. The first phase of the project consisted of water modeling and an engineering study that was completed in 2020 to evaluate future water demand scenarios and alternatives for system improvements to provide adequate water supply and pressure to future industrial customers. The study recommended an interconnection with the CLD Lower System. This consists of a water main extension under I-78 (via steel casing pipe acquired from Upper Macungie Township) and a new pump station on the north side of I-78 to provide adequate supply conditions for future customers.

Project Drivers and Needs to be Met by the Project
The project will meet the supply needs of potential large industrial water users in the CLD Upper System, located in western Lehigh County north of I-78. Additional water modeling may be required to size the waterline to the large user. The design and construction of improvements to convey water to a large user, including an offsite waterline and booster pumping station, will depend upon execution of a DWSA with the potential large user. We anticipate that these improvement costs will be the responsibility of the large user. LCA's objective is to be proactive and identify capital improvements required in order to provide adequate water service to meet future demands. The scope of the capital improvements is not known at this time and is dependent upon approved development(s) in the Upper System.

Project Status - Describe what work, if any has been completed or underway for this project
The engineering study to evaluate supply capacity and distribution piping needs in the Upper System was completed in 2020. Acquisition of the casing pipe owned by UMT across I-78 was completed in 2021 (Cap Ex \$40,000). Design will begin in early 2022 on a capped PVC waterline to be installed through the casing pipe. Construction will follow later that year so the Penn DOT HOP can be closed (Estimated \$70,000). The design phase of the pump station had been accelerated when a dairy proposed to be constructed within the next two years. However, in early January the developer decided to terminate its project. Nevertheless, design will continue through substantial completion of the mechanical design. Future distribution improvements schedule is dependent upon development timing and demand.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-56
Project Name	UPPER SYSTEM PUMP STATION AND WATER MAIN EXTENSION

Prior Project Cost	60,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 80,000
Professional Services	\$ 110,000
Other	\$ 5,000
Contingencies	\$ 25,000
Total Project Cost	\$ 310,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 50,000
--	------------------

		Need	Phase of Work
2022 Budget		\$ 200,000	Install waterline in casing. Permit level pump station design.
1st Year	2023	\$ 50,000	Permitting and final pump station design
2nd Year	2024	\$ -	
3rd Year	2025	\$ -	
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WATER METER REPLACEMENT PROJECT						
Budget Area	Water	Department	Capital Works	Date	1/21/2022	Project No.	SD-W-57
Location	All Suburban Divisions, located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Med	Secondary	Efficiency	Preparer		ALK

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/> Equipment Obsolete
<input checked="" type="checkbox"/>	Scheduled Replacement	<input type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/>	Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input type="checkbox"/> Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2022
Approx. No. of Customers Benefitted	6,183		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
The Project includes the replacement of ~139 each 1-1/2" and 2" water meters (2022) and 6,044 each 5/8" and 1" meters (2025) that have reached the end of their useful lives. All new meters will have radio-read (RR) capability.

Project Drivers and Needs to be Met by the Project
The probability of inaccuracies in meter readings increase with age and usage of the meters. The accuracy of the new meters should have the potential to increase user revenues. Secondly, RR technology will increase meter reading accuracy and efficiency that will allow operators to focus efforts in other critical technical areas.

Project Status - Describe what work, if any has been completed or underway for this project
Aging meters are periodically replaced as part of an on-going program. The construction of the 2018 Water Meter Replacement project included the installation of approximately 3,000 new meters.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Revenue Impact	
Gain/(Loss) in Annual Revenue	\$ 100,000
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Explanation if Necessary
An increase in revenue is anticipated as older meters are replaced. This is due to wear on internal parts that generally causes lower measurements. A 5% increase was assumed in the revenue gain reported above.

Project No.	SD-W-57
Project Name	WATER METER REPLACEMENT PROJECT

Prior Project Cost	\$ 1,500,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 75,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,340,000
Professional Services	
Other	\$ 10,000
Contingencies	\$ 235,000
Total Project Cost	\$ 4,160,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 2,210,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 450,000	Construction
1st Year	2023	\$ 50,000	Construction
2nd Year	2024	\$ 30,000	Design
3rd Year	2025	\$ 2,030,000	Design/Construction
4th Year	2026	\$ 100,000	Construction
5th Year	2027	\$ -	

WASTEWATER

**LEHIGH COUNTY
AUTHORITY SUBURBAN
DIVISION
WASTEWATER
5-YEAR CAPITAL PLAN
2023–2027**

CAPITAL FINANCING JUSTIFICATION

Capital additions to the Wastewater System are justified by calculating the operating cash available based upon projections of revenues over the five-year period. Beyond the operating cash available, remaining sources are project reserves from previous debt issuance and any new borrowing required.

The table below summarizes the capital project sourcing by year and each major financial sourcing category:

CAPITAL FINANCING SOURCES						
	2022	2023	2024	2025	2026	TOTAL
Project Costs	\$4,837,000	\$4,842,000	\$3,992,000	\$1,922,000	\$2,057,000	\$17,650,000
<i>Sources of Funding:</i>						
Current Cash Flows	\$4,837,000	\$4,842,000	\$3,992,000	\$1,922,000	\$2,057,000	\$17,650,000
Cash Reserves	-	-	-	-	-	-
New Borrowing	-	-	-	-	-	-
TOTAL FUNDING	\$4,837,000	\$4,842,000	\$3,992,000	\$1,922,000	\$2,057,000	\$17,650,000

Total spending on capital projects for the five-year period totals \$17,650,000. Current cash flows over the period will provide \$17,650,000 for capital projects. No new borrowing is required.

Revenue requirements will also be impacted by inflation for both the WLI group along with other users of the system. Signatory Revenue increases by year to support the capital plan are as follows:

Year 2022	1.3%
Year 2023	1.4%
Year 2024	1.4%
Year 2025	1.4%
Year 2026	1.4%

CONDENSED CASH FLOW - SUBURBAN WASTEWATER

Dollars	2023	2024	2025	2026	2027
User Charges	19,033,749	19,292,998	19,560,024	19,835,061	20,118,349
Other Operating Revenues	-	-	-	-	-
Non-Operating Revenues	990,769	1,016,832	1,043,676	1,071,326	1,099,805
Operating expenses	(13,687,013)	(14,097,623)	(14,520,551)	(14,956,168)	(15,404,852)
Debt Service - Current Debt	(735,802)	(735,802)	(735,802)	(735,802)	(735,802)
Debt Service - NEW Debt	-	-	-	-	-
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex	(5,294,500)	(5,273,250)	(4,292,000)	(1,990,750)	(2,119,500)
NET FUND FLOWS	307,203	203,155	1,055,347	3,223,667	2,958,000
User Charge Revenue Increase %	1.3%	1.4%	1.4%	1.4%	1.4%
Unrestricted Cash Balance	9,571,488	9,774,643	10,829,989	14,053,657	17,011,657
Unrestricted Investments	7,757,276	7,757,276	7,757,276	7,757,276	7,757,276
Total Unrestricted Balances	17,328,764	17,531,919	18,587,265	21,810,933	24,768,933
Unrestricted Cash - Days on Hand	255	253	272	343	403
DEBT SERVICE COVERAGE RATIO	8.61	8.44	8.27	8.09	7.90

Sourcing of Projects and Debt Service related to various systems is as follows:

BY SYSTEM	PROJECTS	TOTAL	CURRENT FLOWS	CASH RESERVES	NEW DEBT
Annual Projects	SA	\$1,935,000	\$1,935,000	-	-
Western Lehigh Interceptor	S3, S4, S7, S9, S24, S28	\$7,950,000	\$7,950,000	-	-
LCA Wastewater Treatment Plant	S22	\$3,700,000	\$3,700,000	-	-
Common Rate Collector Systems	S6, S10, S17, S18	\$1,300,000	\$1,300,000	-	-
Arcadia West	S8	\$365,000	\$365,000	-	-
Lynn Township	S25, S26	\$400,000	\$400,000	-	-
Little Lehigh Relief Interceptor System	S12, S15, S16	\$2,000,000	\$2,000,000	-	-
	TOTAL	\$17,650,000	\$17,650,000	-	-

LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
2023-2027 CAPITAL PROGRAM
WASTEWATER

Project #	Name or Title of Proposal	Prj. Category	Approval Stage (1)	Plan Total Cost	This Capital Program							Prior Project Cost (2)	Future Project Cost (2)	Total Project Cost
					2022 Budget Approved	2023 Year 1	2024 Year 2	2025 Year 3	2026 Year 4	2027 Year 5	2023-2027 Total			
	<u>Operating/Capital Reserve Funds</u>													
	<u>Annual</u>													
SD-S-A	Annual Projects	AM - Varies	A	\$ 2,165,000	\$ 230,000	\$ 277,000	\$ 302,000	\$ 302,000	\$ 327,000	\$ 727,000	\$ 1,935,000	\$ -		\$2,165,000
	Subtotal			\$ 2,165,000	\$ 230,000	\$ 277,000	\$ 302,000	\$ 302,000	\$ 327,000	\$ 727,000	\$ 1,935,000	\$ -		\$2,165,000
	<u>Pretreatment Plant</u>													
SD-S-22	Pretreatment Plant Improvements	AM - Varies	A	\$ 4,400,000	\$ 700,000	\$ 700,000	\$ 700,000	\$ 700,000	\$ 800,000	\$ 800,000	\$ 3,700,000	\$ -		\$4,400,000
	Subtotal			\$ 4,400,000	\$ 700,000	\$ 700,000	\$ 700,000	\$ 700,000	\$ 800,000	\$ 800,000	\$ 3,700,000			\$4,400,000
	<u>Western Lehigh Interceptor</u>													
SD-S-3	Central Lehigh County WW Capacity Planning & Expansion	New Cust	V	\$ 1,700,000	\$ 400,000	\$ 500,000	\$ 500,000	\$ 250,000	\$ 50,000	\$ -	\$ 1,300,000	\$ 600,000		\$2,300,000
SD-S-4	Spring Creek Force Main Air/Vacuum Valve Replacements	Sys Imp	C	\$ 140,000	\$ 40,000	\$ 50,000	\$ 50,000	\$ -	\$ -	\$ -	\$ 100,000	\$ 48,000	\$0	\$188,000
SD-S-7	WLI Major Rehabilitation and Repairs	Regulatory	P	\$ 450,000	\$ -	\$ 100,000	\$ 100,000	\$ 100,000	\$ 75,000	\$ 75,000	\$ 450,000	\$ -	\$250,000	
SD-S-9	Spring Creek Force Main Condition Assessment	AM-High	S	\$ 350,000	\$ -	\$ -	\$ 50,000	\$ 250,000	\$ 50,000	\$ -	\$ 350,000	\$ -	\$0	\$350,000
SD-S-24	Signatory I & I Investigation & Remediation Program	Regulatory	V	\$ 1,800,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,500,000	\$ -	\$300,000	\$2,100,000
SD-S-28	Upper Western Lehigh Interceptor & Force Main	Regulatory	A	\$ 5,050,000	\$ 100,000	\$ 700,000	\$ 2,000,000	\$ 2,000,000	\$ 250,000	\$ -	\$ 4,950,000	\$ -	\$0	\$5,050,000
	Subtotal			\$ 9,490,000	\$ 840,000	\$ 1,650,000	\$ 3,000,000	\$ 2,900,000	\$ 725,000	\$ 375,000	\$ 8,650,000	\$ 648,000	\$550,000	\$9,988,000
	<u>Satellite Systems</u>													
SD-S-6	Wynnewood I & I Investigation & Remediation Program	AM - Varies	V	\$ 150,000	\$ 25,000	\$ 35,000	\$ 40,000	\$ 40,000	\$ 5,000	\$ 5,000	\$ 125,000	\$ 20,000	\$25,000	\$ 195,000
SD-S-8	Arcadia West WWTP Mechanical Screen	Efficiency	P	\$ 415,000	\$ 50,000	\$ 100,000	\$ 225,000	\$ 40,000	\$ -	\$ -	\$ 365,000	\$ -	\$0	\$ 415,000
SD-S-10	SSES (Weisenberg, UMiT, Lowhill)	Regulatory	V	\$ 100,000	25,000	25,000	25,000	25,000	-	-	\$ 75,000	\$ -	\$0	\$ 100,000
SD-S-17	Heidelberg Heights I & I Investigation & Remediation Program	AM - Varies	V	\$ 900,000	\$ 300,000	\$ 300,000	\$ 100,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 600,000	\$ 850,000	\$50,000	\$ 1,800,000
SD-S-18	Heidelberg Heights WWTP Rehabilitation	AM - High	P	\$ 550,000	\$ 200,000	\$ 250,000	\$ 50,000	\$ 10,000	\$ 40,000	\$ -	\$ 350,000	\$ 210,000		\$ 760,000
SD-S-25	Lynn Township WWTP Upgrades & Expansion Design	AM - High	P	\$ 225,000	\$ 25,000	\$ 100,000	\$ 100,000	\$ -	\$ -	\$ -	\$ 200,000	\$ 5,000		\$ 230,000
SD-S-26	Lynn Township I & I Investigation & Remediation Program	AM - High	V	\$ 225,000	\$ 25,000	\$ 75,000	\$ 50,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 200,000	\$ 170,000	\$50,000	\$ 445,000
	Subtotal			\$ 2,715,000	\$ 650,000	\$ 960,000	\$ 590,000	\$ 240,000	\$ 120,000	\$ 155,000	\$ 2,065,000	\$ 1,255,000	\$125,000	\$ 4,095,000
	<u>Little Lehigh Relief Interceptor System</u>													
SD-S-15	Park Pump Station Rehabilitation/Improvements	AM - High	C	\$ 2,400,000	\$ 400,000	\$ 1,500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ 2,000,000	\$ 4,000,000	\$0	\$ 6,400,000
	Subtotal			2,400,000	400,000	1,500,000	500,000	-	-	-	2,000,000	4,000,000	-	6,400,000
	GRAND TOTAL WASTEWATER PROJECTS			\$ 21,170,000	\$ 2,820,000	\$ 5,087,000	\$ 5,092,000	\$ 4,142,000	\$ 1,972,000	\$ 2,057,000	\$ 18,350,000	\$ 5,903,000	\$ 675,000	\$ 27,048,000

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents. All projects are LCA funded.

(2) If blank , cost is not applicable (annual project) or to be determined

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	ANNUAL PROJECTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-A
Location	LCA WLI facilities located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Efficiency	Preparer		CEV

Purpose of Expenditure (check all that apply)	
<input checked="" type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete
Scheduled Replacement	Comply with Regulatory Requirements
Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	N/A	Project inception date	N/A
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	N/A
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This is a consolidated annual project that has been previously listed as separate smaller annual projects. This annual project includes the following: Mobile Equipment (a new jet/vac truck is proposed for 2027), Sewer Company Acquisitions, Other Equipment, Wastewater Facility Asset Management Upgrades, General Sewer System Improvements, and development related service connections and extensions.</p>

Project Drivers and Needs to be Met by the Project
<p>Asset management and efficiency are the primary project drivers. Annual improvements help maintain the operation and satisfactory level of service of various wastewater facilities in the Suburban Division.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>This is an annual project.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-A
Project Name	ANNUAL PROJECTS

Prior Project Cost	N/A
Estimated Project Costs:	2022-2027
LCA Staff	\$ 250,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,565,000
Professional Services	\$ 200,000
Other	\$ 50,000
Contingencies	\$ 100,000
Total Project Cost	\$ 2,165,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 1,935,000
--	---------------------

	Need	Phase of Work
2022 Budget	\$ 230,000	procurement, planning, design & construction
1st Year 2023	\$ 277,000	procurement, planning, design & construction
2nd Year 2024	\$ 302,000	procurement, planning, design & construction
3rd Year 2025	\$ 302,000	procurement, planning, design & construction
4th Year 2026	\$ 327,000	procurement, planning, design & construction
5th Year 2027	\$ 727,000	procurement, planning, design & construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	PRETREATMENT PLANT IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-22
Location	LCA Pretreatment Plant (<i>Industrial Blvd & Rt 100</i>)			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CEV

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	<input type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	<input type="checkbox"/> Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	N/A
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	N/A
Will the Project Require Obtaining Land Rights	No		

Provides pretreatment for industrial customers such as Boston Beer, Coca-Cola, Nestle Waters, Niagara, Ocean Spray, Bimbo and others.

Detailed Project Description
This capital project is a comprehensive on-going program to address the continued reliability and functionality of the LCA Wastewater Pretreatment Plant. Planned projects include Phase 2 SCADA system implementation, security upgrades, belt filter press #1 and #4 rebuilds, air deck mixer replacements (multi-year), solids building HVAC system upgrade, primary clarifiers mechanical refurbish (multi-year), final clarifiers drive replacements (multi-year), annual pavement rehabilitation, cryogenic plant control center modernization, and miscellaneous mechanical and electrical upgrades/replacements.

Project Drivers and Needs to be Met by the Project
The primary project drivers are asset management and system improvements. This facility is critical to the local economy and growth in the Western Lehigh sewer service area. Capital improvements are needed annually to maintain the level of service for the pretreatment facility, which has been in continuous operation since 1990, with significant equipment exposed to corrosive &/or severe duty conditions. The increased industrial loading rates experienced since the plant was placed into service drives the need for repairs, replacements and process modifications/optimization. The Capital Plan intends to maintain the reliability, performance, and structural integrity of the physical plant while maintaining economic viability.

Project Status - Describe what work, if any has been completed or underway for this project
A semi-annual program to rebuild the belt filter presses was started in 2015. Annual pavement reconstruction projects are performed on the main access routes used by the waste hauler trucks within the plant site to replace failed and deteriorated asphalt pavement with concrete pavement. The SCADA system and grease station projects were completed in 2019. Replacement of the cryogenic plant "B-Mac" compressor was completed in 2019, along with other capital improvements to the cryogenic plant. In 2020 a project to modify the waste hauler station piping in order to pre-thicken the waste (prior to conveyance to the digesters) will be completed, along with mechanical upgrades of the 3 digesters, pavement rehabilitation, and influent pump station upgrade.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-22
Project Name	PRETREATMENT PLANT IMPROVEMENTS

Prior Project Cost	N/A
Estimated Project Costs:	2022-2027
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 4,000,000
Professional Services	\$ 250,000
Other	\$ -
Contingencies	\$ 100,000
Total Project Cost	\$ 4,400,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 3,700,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 700,000	planning, design & construction
1st Year	2023	\$ 700,000	planning, design & construction
2nd Year	2024	\$ 700,000	planning, design & construction
3rd Year	2025	\$ 700,000	planning, design & construction
4th Year	2026	\$ 800,000	planning, design & construction
5th Year	2027	\$ 800,000	planning, design & construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	CENTRAL LEHIGH COUNTY WASTEWATER CAPACITY PLANNING & EXPANSION						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-3
Location	Western Lehigh LCA Service Area tributary to the AD WWTP			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Rev Opprt	Preparer		PMD

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/>	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input checked="" type="checkbox"/>	Other (explain): SD-Future Wastewater Treatment Capacity

Additional Information			
Expected Useful Life (Years)	30	Project inception date	2009
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
Scope involves planning for additional treatment capacity for WLI service area. This planning project is needed for future wastewater treatment capacity and covers either expanding the Kline's Island Wastewater Treatment Plant (KIWWTP) or converting the Pretreatment Plant to a full treatment facility, which includes discharge pumping and piping. This project is also needed for planning additional conveyance capacity for the WLI area (including the potential Regional Park PS in the future, if needed). Completion of the Regional Act 537 Plan is set for March 2025 and design/construction of the yet to be selected options are assumed to begin in 2026 under future projects.

Project Drivers and Needs to be Met by the Project
The City's Kline's Island WWTP does not currently have enough available wastewater treatment allocation to meet LCA's future needs through 2050. To meet wastewater treatment needs, the best available options (expand KIWWTP or upgrade the Pretreatment Plant (PTP) to a direct discharge facility) must be investigated. Although some recovery of capacity will occur through inflow and infiltration removal, there is no wastewater allocation remaining for sale. Updating the 537 Plan is the primary cost factor for planning. Capital costs will be recovered through a combination of increased user fees and capital recovery fees to new customers. The risk consequence of not doing this project includes regulatory action against the signatory group.

Project Status - Describe what work, if any has been completed or underway for this project
In 2013, ARRO, Inc. and AECOM were retained to prepare an Act 537 Plan (LCA focused, with City partner) to evaluate the alternatives for an additional 4 MGD of wastewater treatment capacity. The project was put on hold by DEP in 2016, with an emphasis on managing wet weather and removing I&I. In 2019, per regulatory action by DEP, preliminary work on the Act 537 Plan (Regional) was restarted. The full Act 537 Plan (Regional) due is now due by March 2025. An Interim Act 537 Plan (Regional) was submitted to DEP in September 2020 and included flow projections through 2025. Proposed work from 2022-2025 will be focused on alternative analyses as it specifically relates to the WLI service area and the subsequent impact on the entire sewer system. 2022 also includes Master Plan preparation for the PTP.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-3
Project Name	CENTRAL LEHIGH COUNTY WASTEWATER CAPACITY PLANNING & EXPANSION

Prior Project Cost	\$ 600,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 150,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 1,450,000
Other	\$ -
Contingencies	\$ 100,000
Total Project Cost	\$ 2,300,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 1,300,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 400,000	537 Planning
1st Year	2023	\$ 500,000	537 Planning
2nd Year	2024	\$ 500,000	537 Planning
3rd Year	2025	\$ 250,000	537 Planning
4th Year	2026	\$ 50,000	537 Planning
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	SPRING CREEK FORCEMAIN AIR/VACUUM VALVE REPLACEMENTS						
Budget Area	Wastewater	Department	Operations	Date	1/12/2022	Project No.	SD-S-4
Location	WLI, various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		AK

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input checked="" type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2018
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2023
Will the Project Require Obtaining Land Rights	No		

**= The Spring Creek Pump Station & Force Main provides service to 7 WL signatories.

Detailed Project Description
Replacement of inoperable and/or badly corroded original air release or combination air/vacuum release valves (ARV's) on the existing Spring Creek Pump Station force main.

Project Drivers and Needs to be Met by the Project
Inoperable air release valves contribute to both poor hydraulics and wasted pump energy created by allowing air to either accumulate at high points along the force main, or to not provide proper vacuum release. Replacing the air valves should improve the pump station and force main performance. The odor control canisters at various ARVs will be replaced as part of construction.

Project Status - Describe what work, if any has been completed or underway for this project
Design work was completed in 2018. Project to be implemented as an annual upgrade with 2 or 3 ARVs replaced per year, starting in 2022. Construction schedule is dependent upon ability to take Spring Creek Pump Station off-line for a day to drain the impacted section of force main to facilitate replacement of an ARV.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Replacement of the air valves should improve pump efficiency and hydraulic performance per the original design intent, which may yield a nominal reduction in pump horsepower required to convey wastewater and therefore realize a nominal savings in electricity costs.

Project No.	SD-S-4
Project Name	SPRING CREEK FORCEMAIN AIR/VACUUM VALVE REPLACEMENTS

Prior Project Cost	\$ 48,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 20,000
Land Acquisition	\$ -
Construction/Equipment	\$ 80,000
Professional Services	\$ 30,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 188,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 100,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 40,000	Construction
1st Year	2023	\$ 50,000	Construction
2nd Year	2024	\$ 50,000	Construction
3rd Year	2025	\$ -	
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WESTERN LEHIGH INTERCEPTOR REHABILITATION AND REPAIRS						
Budget Area	Wastewater	Department	Capital Works	Date	2/8/2021	Project No.	SD-S-7
Location	Western Lehigh LCA Service Area tributary to the AD WWTP			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	AM - High	Preparer	CV/JP	

Purpose of Expenditure (check all that apply)			
	New Facility		Correct Known or Potential Safety Issue
X	Existing Facility - Rehabilitation/Upgrade		Equipment Obsolete
	Scheduled Replacement	X	Comply with Regulatory Requirements
	Improved Service		Equipment/Infrastructure at End of Useful Life
	Study		Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2022
Approx. No. of Customers Benefitted	N/A	Anticipated Project completion date	N/A
Is this System part of a Common User Rate?	N/A		
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This project is a result of continued planning and investigatory work in the Western Lehigh Interceptor (WLI) service area. The project scope includes inflow and infiltration investigation and remediation of sanitary sewer manholes and interceptor main line, in order to extend service life and seal the system from wet weather I/I, with the ultimate objective of demonstrating additional conveyance capacity for the WLI area. The work includes testing and sealing pipe joints, internal lining of damaged sewer main line, flood-proofing manholes, replacing manhole frames and covers, structural manhole repairs, and sealing of manhole interiors.</p>

Project Drivers and Needs to be Met by the Project
<p>The primary project driver is regulatory. The in-progress regional Act 537 planning required by DEP has mandated implementation of I/I source removal work to mitigate Trexlertown area capacity problems. Repairing and sealing leaky sewerage system components will not only service to comply with the I/I reduction mandate, but also align with LCA's strategic plan for implementing a comprehensive asset management program.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>A "Test & Seal" project was performed in the WLI service area in 2016 and 2017 to investigate and mitigate leaking interceptor pipe joints. Follow-up CCTV inspection was conducted in 2018 to identify problems following peak weather events. Repair of leaking end seals was completed in 2018, for interceptor sections that were previously lined in sections that experienced liner separation at manholes. In 2020 and 2021, annual manhole flood proofing and related repairs was performed. In 2022 a third phase of manhole flood proofing will be conducted. Subsequent rehabilitation work will be prioritized based on continued inspection and investigation efforts.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Explanation if Necessary
Reducing inflow and infiltration in the WLI sewer area is a regulatory requirement to eliminate dry and wet weather overflows

Project No.	SD-S-7
Project Name	WESTERN LEHIGH INTERCEPTOR REHABILITATION AND REPAIRS

Prior Project Cost	\$0
Estimated Project Costs:	2022-2027
LCA Staff	\$ 40,000
Land Acquisition	\$ -
Construction/Equipment	\$ 320,000
Professional Services	\$ 60,000
Other	
Contingencies	\$ 30,000
Total Project Cost	\$ 450,000

Project Estimate Level	
X	Conceptual Estimate
	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 450,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ -	
1st Year	2023	\$ 100,000	planning & construction
2nd Year	2024	\$ 100,000	planning & construction
3rd Year	2025	\$ 100,000	planning & construction
4th Year	2026	\$ 75,000	planning & construction
5th Year	2027	\$ 75,000	planning & construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	SPRING CREEK FORCE MAIN CONDITION ASSESSMENT						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-9
Location	WLI, various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM High	Secondary	Sys Imp	Preparer		ALK

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	TBD	Project inception date	2019
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	No		
**= The Spring Creek Force Main provides service to 7 WL signatories.			

Detailed Project Description
The Spring Creek force Main was installed in two phases. The first section was installed in 1995 and an extension was installed in 2004. A PURE SmartBall investigation will be performed as part of the condition assessment to identify the location of gas pockets and leaks. A broadband electromagnetic (BEM) test will then be conducted at locations where gas pockets are found to determine remaining wall thickness and assess the remaining useful life of the force main before scoping a repair, rehabilitation, or replacement project. Pipeline rehabilitation is not included in this project as the scope of that work is not known at this time.

Project Drivers and Needs to be Met by the Project
Asset management is the primary driver for this project. The Spring Creek Pump Station and Force Main is an integral part of the Western Lehigh service area. It is essential to perform necessary rehabilitation of the force main to extend the service life of the infrastructure, restore level of service, and mitigate the risk of a catastrophic failure.

Project Status - Describe what work, if any has been completed or underway for this project
Project will commence in 2024.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-9
Project Name	SPRING CREEK FORCE MAIN CONDITION ASSESSMENT

Prior Project Cost	0
Estimated Project Costs:	2022-2027
LCA Staff	\$ 40,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 270,000
Other	\$ -
Contingencies	\$ 40,000
Total Project Cost	\$ 350,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 350,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ -	
1st Year	2023	\$ -	
2nd Year	2024	\$ 50,000	planning
3rd Year	2025	\$ 250,000	Study/investigation
4th Year	2026	\$ 50,000	Study/investigation
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	SIGNATORY INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-24
Location	LCA WLI Sewer Service Area			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Sys Imp	Preparer		PMD

Purpose of Expenditure (check all that apply)			
<input checked="" type="checkbox"/>	New Facility		Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade		Equipment Obsolete
	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
	Improved Service		Equipment/Infrastructure at End of Useful Life
	Study		Other (explain):

Additional Information			
Expected Useful Life (Years)	NA	Project inception date	2009
Approx. No. of Customers Benefitted	WLI		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	No		
Provides service to 7 WLI signatories, the Borough of Emmaus & others.			

Detailed Project Description
LCA provides the leadership, technical expertise and administration for coordinating the projects located within the Signatory sewer systems. The project included two major components: (1) Investigatory/planning work such as flow monitoring, the SCARP development, SSES, Level of Service Determination, Alternatives Analysis, etc., that are necessary to develop the best course of action to reduce I&I within the system(s). Much of this work has been completed. Part (2) - Design, permitting and the construction for rehabilitation of infrastructure that will be necessary to comply with recent PA DEP 537 directives - has not been completed yet. Between 2022-2027, annual WLI I&I projects are slated for completion in accordance with Interim Act 537 commitments. Annual engineering assistance for the Western Lehigh Sewer group is also included within this project.

Project Drivers and Needs to be Met by the Project
Throughout the 2010s, SSES work, flow monitoring and preliminary modeling work was completed to define the characteristics of the sewer basins and identify the leakiest basins with the Western Lehigh Sewer group. Now that DEP has re-engaged the Region, Act 537 Planning has restarted and efforts have been realigned. Recalibration of the WLI model was completed in mid-2020. The model assists in determining the effectiveness of the source removal work completed to date and design of the Trexlertown capacity problems. In 2022, the WLI model will be joined with the remaining KISS model currently under development. Risk of not doing this project include regulatory action against the region.

Project Status - Describe what work, if any has been completed or underway for this project
From 2013-2016, investigation and preliminary alternatives analysis work was completed under the guidelines of Act 537. Flow monitoring and analysis also occurred in 2017, 2019 and 2020. The WLI model recalibration was completed in 2020 and an annual program to rehab WLI manholes was started in 2020. Items for 2022-2027 include SSES work, sewer modeling, and additional MH rehab work along the WLI (per the LCA commitment identified in the Interim Act 537 Plan). All of these efforts will help shape the decisions that will be made under the Regional Act 537 Plan that is due in March 2025.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-24
Project Name	SIGNATORY INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM

Prior Project Cost	\$ -
Estimated Project Costs:	2022-2027
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 800,000
Professional Services	\$ 800,000
Other	\$ -
Contingencies	\$ 100,000
Total Project Cost	\$ 1,800,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 1,500,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 300,000	Planning/Construction
1st Year	2023	\$ 300,000	Planning/Construction
2nd Year	2024	\$ 300,000	Planning/Construction
3rd Year	2025	\$ 300,000	Planning/Construction
4th Year	2026	\$ 300,000	Planning/Construction
5th Year	2027	\$ 300,000	Planning/Construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	UPPER WESTERN LEHIGH INTERCEPTOR PUMP STATION & FORCE MAIN						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-28
Location	WLI, Upper and Lower Macungie Townships			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Sys Imp	Preparer		AK

Purpose of Expenditure (check all that apply)			
<input checked="" type="checkbox"/>	New Facility		Correct Known or Potential Safety Issue
	Existing Facility - Rehabilitation/Upgrade		Equipment Obsolete
	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service		Equipment/Infrastructure at End of Useful Life
	Study	<input checked="" type="checkbox"/>	Other (explain): Provide capacity for future growth.

Additional Information			
Expected Useful Life (Years)	100	Project inception date	2021
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	Yes		

**=The WLI system provides service to 7 WLI signatories.

Detailed Project Description
As identified in the Interim Act 537 plan approved by DEP in June 2021, conveyance capacity in the Trexlertown area of the Western Lehigh Interceptor was assigned a high priority due to sanitary surcharging and overflows in the vicinity. In late 2019, a study commenced to look at the possible solutions in this area: parallel interceptors, underground storage pipe, and an above ground storage tank. These alternatives indicated downstream impacts and long construction times. A third alternative was developed which includes bypass pumping from a location at the Industrial Pretreatment Plant to a location in the Upper Macungie Township interceptor which has capacity for the additional flows. The alternatives are documented in a Special Act 537 Study being prepared at the request of DEP.

Project Drivers and Needs to be Met by the Project
The primary drivers for the project are regulatory and system improvement. Per the DEP approved Interim 537 Plan, action is required to alleviate the current sanitary sewer interceptor system bottleneck in the Trexlertown area. This project is intended to address dry-day surcharging and overflows, and allow for future growth.

Project Status - Describe what work, if any has been completed or underway for this project
A Special Act 537 Study is being prepared as part of the Trexlertown Area Capacity Solution Alternatives project. This project is the recommended alternative identified in that study.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-28
Project Name	UPPER WESTERN LEHIGH INTERCEPTOR PUMP STATION & FORCE MAIN

Prior Project Cost	
Estimated Project Costs:	2022-2027
LCA Staff	\$ 150,000
Land Acquisition	\$ 100,000
Construction/Equipment	\$ 4,000,000
Professional Services	\$ 350,000
Other	\$ 50,000
Contingencies	\$ 400,000
Total Project Cost	\$ 5,050,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 4,950,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 100,000	Planning/Design
1st Year	2023	\$ 700,000	Permitting/Construction
2nd Year	2024	\$ 2,000,000	Construction
3rd Year	2025	\$ 2,000,000	Construction
4th Year	2026	\$ 250,000	Construction
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WYNNEWOOD INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-6
Location	WWD, North Whitehall Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Regulatory	Preparer		JP

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/>	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
<input type="checkbox"/>	Improved Service	<input type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input type="checkbox"/>	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2019
Approx. No. of Customers Benefitted	219		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
In 2020, LCA completed updated CCTV inspection condition assessment of the sanitary sewer collection system. This data was used in identifying problem areas, and LCA will begin implementing annual repair/remediation measures to eliminate excess wet weather flow into the Wynnewood Terrace sanitary sewer system, located in North Whitehall Township.

Project Drivers and Needs to be Met by the Project
The primary drivers for the project are: maintain the level of service, avoid regulatory violations due to peak wet weather flows, and reduce system operation cost. During wet-weather events, excess flows create capacity problems at the wastewater treatment plant and drive operating costs higher. Removal of wet weather I/I will reduce treatment costs, avoid hydraulic overloads, and reclaim capacity for utilization by potential new customers.

Project Status - Describe what work, if any has been completed or underway for this project
A "Test & Seal" project was completed in the Wynnewood Terrace sanitary sewer system in 2016, however, wet weather flows have remained a problem. An updated system-wide CCTV inspection condition assessment was completed in 2020 that was used to identify problem locations and scope out necessary repairs. Capital plan cost is to perform system spot repairs. Periodic CCTV inspection updates are required as a follow up in later years to track system condition and identify problems.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Reducing inflow and infiltration should result in electrical savings by reducing volume of wastewater to pump. However, it is difficult to quantify the amount of flow reduction and therefore electrical savings. Exact costs to be determined.

Project No.	SD-S-6
Project Name	WYNNEWOOD INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM

Prior Project Cost	\$20,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 110,000
Professional Services	\$ -
Other	
Contingencies	\$ 10,000
Total Project Cost	\$ 150,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
X	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 125,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	planning & construction
1st Year	2023	\$ 35,000	planning & construction
2nd Year	2024	\$ 40,000	planning & construction
3rd Year	2025	\$ 40,000	planning & construction
4th Year	2026	\$ 5,000	study/investigation
5th Year	2027	\$ 5,000	study/investigation

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	ARCADIA WEST WWTP MECHANICAL SCREEN						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-8
Location	AWD, Weisenberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	Sys Imp	Preparer		CEV

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/>	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input type="checkbox"/>	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input checked="" type="checkbox"/>	Other (explain): Operational Efficiency, safety

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2018
Approx. No. of Customers Benefitted	22		
Is this System part of a Common User Rate?	No	Anticipated Project completion date	2024
Will the Project Require Obtaining Land Rights	No		
Serves Arcadia West Industrial Park, West Hills Business Center, NW Lehigh SD Elementary School.			

Detailed Project Description
The project involves the design and installation of an automatic mechanical screen and associated components at the influent end (headworks) of the Arcadia West Industrial Park Wastewater Treatment Plant, located in Weisenberg Township.

Project Drivers and Needs to be Met by the Project
The primary drivers for the project are: increased operational efficiency, system improvement and reduce operation costs. There is currently no means to automatically remove the inorganic debris (rags, wipes, plastics, etc.) from the facility's influent waste stream. This bulky material clogs pumps and periodically accumulates on and fouls downstream process equipment (such as pump floats, piping, and air diffusers). Removal of this material requires manual effort (often in difficult access locations) or complete tank draining (which increases operational costs). A mechanical screen will improve facility operation by removing the rags and other inorganic debris from the influent plant flow and may reduce operations cost.

Project Status - Describe what work, if any has been completed or underway for this project
An internal investigation was performed to determine if the comminutor performance can be optimized to decrease the debris accumulation. Rags and wipes have been plaguing the plant for years, likely from one or more of the connected industries, and should be removed from the waste stream. The preferred alternative to removing the rags and resolving the problem is a mechanical screen. The screen project will be designed in 2022 and constructed in 2023 and 2024.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
The mechanical screen will increase operational costs marginally mainly due to electrical power and debris disposal. However, the increase in operational costs will be offset by a decrease in staff costs associated with not having to remove rags and inorganic debris that currently are not screened from the waste stream and clog downstream pumps and accumulate on mechanical and instrumentation equipment. Exact costs to be determined.

Project No.	SD-S-8
Project Name	ARCADIA WEST WWTP MECHANICAL SCREEN

Prior Project Cost	0
Estimated Project Costs:	2022-2027
LCA Staff	\$ 20,000
Land Acquisition	\$ -
Construction/Equipment	\$ 300,000
Professional Services	\$ 75,000
Other	\$ -
Contingencies	\$ 20,000
Total Project Cost	\$ 415,000

Project Estimate Level	
<input checked="" type="checkbox"/>	Conceptual Estimate
<input type="checkbox"/>	Preliminary Estimate
<input type="checkbox"/>	Budget Estimate
<input type="checkbox"/>	Definitive Estimate

Requested in this Capital Program	\$ 365,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 50,000	design
1st Year	2023	\$ 100,000	permitting & construction
2nd Year	2024	\$ 225,000	construction
3rd Year	2025	\$ 40,000	construction
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	WEISENBERG, LOWHILL, UMIT TOWNSHIP SSES/REHAB						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-10
Location	Weisenberg, Lowhill, and Upper Milford Townships			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Sys Imp	Preparer		JP

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/>	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
<input type="checkbox"/>	Improved Service	<input type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/>	Study	<input type="checkbox"/>	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2020
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	No		

** Includes customers in the Weisenberg, Lowhill and Upper Milford systems.

Detailed Project Description
<p>This project involves the preparation of a Sanitary Sewer Evaluation Study (SSES) to identify primary areas of concern and prioritize future sewer system improvements in the Weisenberg, Lowhill, and Upper Milford sanitary sewer systems. Components of the SSES may include manhole inspections, CCTV inspections, and flow monitoring. A remediation project to address problem areas and mitigate inflow and infiltration (I/I) will be part of a future project with scope to be determined.</p>

Project Drivers and Needs to be Met by the Project
<p>The primary driver for this project is regulatory. These three systems ultimately tie in to the Western Lehigh Interceptor (WLI). Managing inflow and infiltration in these systems will in turn help manage flows in the WLI. Annual progress reporting for mitigating I/I is required by DEP for each system connecting to the WLI.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>A Sanitary Sewer Evaluation Study was done for these systems in the early 2010s as part of the overall SCARP program (Sewer Capacity Assurance Rehabilitation Program). Information from this previous study will be used to help determine any increase in I/I.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-10
Project Name	WEISENBERG, LOWHILL, UMiT TOWNSHIP SSES/REHAB

Prior Project Cost	0
Estimated Project Costs:	2022-2027
LCA Staff	\$ 20,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 70,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 100,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 75,000
--	------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	Study/investigation
1st Year	2023	\$ 25,000	Study/investigation
2nd Year	2024	\$ 25,000	Study/investigation
3rd Year	2025	\$ 25,000	Study/investigation
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	HEIDELBERG HEIGHTS INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	3/14/2019	Project No.	SD-S-17
Location	HHD, Heidelberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	AM-high	Preparer		JP

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/>	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input checked="" type="checkbox"/>	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input checked="" type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input type="checkbox"/>	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2016
Approx. No. of Customers Benefitted	145		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2027
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This project includes investigative and rehabilitative work to address wet weather inflow and infiltration (I/I), and is part of the Corrective Action Plan implementation within the DEP Consent Order and Agreement. Rehabilitative work includes replacement of all original vitrified clay pipe (VCP) sewer main, VCP sewer lateral replacement, manhole replacement, manhole sealing, cleanout installation on laterals, and private side investigation. It is assumed that the annual construction projects will be designed, managed and bid in-house.</p>

Project Drivers and Needs to be Met by the Project
<p>The primary driver for this project is regulatory. The goal of this multi-year project is to eliminate DEP violations from wet weather overflows, bypasses, and treatment plant effluent limit exceedance events. Historical flows into the wastewater treatment plant have been 3 to 4 times the plant capacity during peak weather events. Mitigation of the compliance issues requires elimination of excess inflow and infiltration into the sewage collection system.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Updated CCTV system inspection was performed in 2017 to document I/I problem areas. In 2018 the replacement of 54 laterals and 1,070 linear feet of sewer main was completed on Glen Court. In 2019 the replacement of 25 laterals and 1,100 linear feet of sewer main was completed along Heidelberg Heights Road. In 2020 the replacement of 18 laterals and 850 linear feet of sewer main was completed along Lake View Street. In 2021 the replacement of 18 laterals and 700 linear feet of sewer main was completed along Thompson St. The remaining sections of original VCP sewer mains and laterals will be replaced in 2022 and 2023. Rehabilitation work beyond 2023 will focus private lateral inspection and rehabilitation and follow-up flow monitoring work.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
<p>Reducing excess inflow/infiltration will reduce occurrence of overflows/bypasses at the wastewater treatment plant, facilitate continued compliance with PaDEP, and save staff time and money. It is difficult to quantify potential savings with varying intensity storms and fluctuating groundwater levels.</p>

Project No.	SD-S-17
Project Name	HEIDELBERG HEIGHTS INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM

Prior Project Cost	850,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 80,000
Land Acquisition	\$ -
Construction/Equipment	\$ 600,000
Professional Services	\$ 170,000
Other	\$ -
Contingencies	\$ 50,000
Total Project Cost	\$ 1,750,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 600,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 300,000	construction
1st Year	2023	\$ 300,000	construction
2nd Year	2024	\$ 100,000	private side investigation, administration & construction
3rd Year	2025	\$ 100,000	private side investigation, administration & construction
4th Year	2026	\$ 50,000	private side investigation, administration & construction
5th Year	2027	\$ 50,000	private side investigation, administration & construction

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	HEIDELBERG HEIGHTS WWTP REHABILITATION						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-18
Location	HHD, Heidelberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Efficiency	Preparer		CEV

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	<input type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	<input type="checkbox"/> Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2018
Approx. No. of Customers Benefitted	145		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This is a multi-year project to provide needed upgrades at the Heidelberg Heights wastewater treatment plant. The partitioned steel equalization/sludge holding tank is part of the original plant from the 1970s and was rehabilitated in 2019 into 2020. Future projects include installation of a mechanical screen at the headworks of the plant (2022 installation) to remove rags and other inorganic material, installation of an expanded catwalk grating system above the elevated SBR tanks in order to improve maintenance access, and miscellaneous equipment upgrade/replacement.</p>

Project Drivers and Needs to be Met by the Project
<p>The primary project drivers are efficiency, asset management and safety. An expanded catwalk grating system above the SBR tanks will improve maintenance access and operator safety. A mechanical screen will remove bulky inorganics and rags from the influent waste stream and thereby extend downstream pump life and reduce maintenance problems caused by accumulation of rags and debris.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Rehabilitation of the 40+ year old EQ tank rehabilitation was completed early 2019. Design of the mechanical screen project will be completed in 2022 and construction will be completed in 2023.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
<p>Exact costs to be determined.</p>

Project No.	SD-S-18
Project Name	HEIDELBERG HEIGHTS WWTP REHABILITATION

Prior Project Cost	210,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 390,000
Professional Services	\$ 80,000
Other	
Contingencies	\$ 50,000
Total Project Cost	\$ 760,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 350,000
--	-------------------

		Need	
2022 Budget		\$ 200,000	design, permitting, commence construction
1st Year	2023	\$ 250,000	construction
2nd Year	2024	\$ 50,000	construction
3rd Year	2025	\$ 10,000	planning & design
4th Year	2026	\$ 40,000	construction
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	LYNN TOWNSHIP WWTP EXPANSION DESIGN						
Budget Area	Wastewater	Department	Capital Works	Date	1/27/2022	Project No.	SD-S-25
Location	Lynn Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Efficiency	Preparer		ELH

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/> New Facility	<input checked="" type="checkbox"/> Correct Known or Potential Safety Issue		
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete		
<input type="checkbox"/> Scheduled Replacement	<input type="checkbox"/> Comply with Regulatory Requirements		
<input checked="" type="checkbox"/> Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life		
<input type="checkbox"/> Study	<input type="checkbox"/> Other (explain):		

Additional Information			
Expected Useful Life (Years)	35	Project inception date	2015
Approx. No. of Customers Benefitted	381		
Is this System part of a Common User Rate?	No	Anticipated Project completion date	TBD
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
The inception of this facility expansion project pre-dates LCA's acquisition of the Lynn Township sewer system and was originally planned by the Lynn Township Sewer Authority (LTSA) in accordance with the Lynn Township Act 537 Sewage Facilities Plan. The project involved the expansion of the WWTP capacity from 80,000 GPD to 160,000 GPD, in order to accommodate significant growth that was anticipated. Since that time the significant growth pressure has subsided, and Lynn Township was directed by DEP to update their Act 537 Plan to include current growth projections. The updated growth projection numbers in the upcoming Act 537 Plan update by Lynn Township will be used to assess the urgency and quantify the magnitude of a future expansion project. The capital plan reflects design phase only at this time.

Project Drivers and Needs to be Met by the Project
Asset management and efficiency are the primary project drivers. The WWTP expansion, as originally designed and addressed in the Township's Act 537 Plan (2007) at the time, was driven by projected growth and system inflow and infiltration (I/I) issues. Timing of the WWTP expansion construction will be dependent upon short and long term capacity needs. The purpose of this project is to update the design in accordance with updated Act 537 population growth projections, and obtain DEP permitting in the event that development needs necessitate plant expansion.

Project Status - Describe what work, if any has been completed or underway for this project
Growth projections will be re-examined when completed in 2022 as part of the Township's work to update the Act 537 Sewage Facilities Plan, to ensure the plant is properly sized. Design will begin in 2023. Construction phase timing will be a function of development pressure and contingent upon developer capacity charges. therefore, conceptual construction phase costs are not reflected in the Capital Plan.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Exact costs to be determined.

Project No.	SD-S-25
Project Name	LYNN TOWNSHIP WWTP EXPANSION DESIGN

Prior Project Cost	\$ 5,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 35,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 160,000
Other	
Contingencies	\$ 30,000
Total Project Cost	\$ 230,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
X	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 200,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	planning
1st Year	2023	\$ 100,000	design
2nd Year	2024	\$ 100,000	design & permitting
3rd Year	2025	\$ -	
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	LYNN TOWNSHIP INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department		Date	1/12/2022	Project No.	SD-S-26
Location	LTD, Lynn Township Division			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	AM-high	Preparer		JMP

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue	
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/> Equipment Obsolete	
<input type="checkbox"/>	Scheduled Replacement	<input checked="" type="checkbox"/> Comply with Regulatory Requirements	
<input type="checkbox"/>	Improved Service	<input type="checkbox"/> Equipment/Infrastructure at End of Useful Life	
<input checked="" type="checkbox"/>	Study	Other (explain):	

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2018
Approx. No. of Customers Benefitted	381		
Is this System part of a Common User Rate?	No	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This project is part of a DEP mandated Corrective Action Plan, and is intended to mitigate inflow and infiltration into the collection system during and after peak weather events and eliminate system overflows and treatment plant bypasses. Updated internal CCTV inspection of the sewage collection system and inspection of manholes were performed in 2019 and the data was used to identify and target and repair locations in the Lynn Township sewage collection system. Capital rehabilitation projects are planned starting in 2020 and include a comprehensive manhole rehabilitation, collection system repairs, and investigation and enforcement of illegal connections on the private side.</p>

Project Drivers and Needs to be Met by the Project
<p>The primary project driver is regulatory, as the work is part of the DEP-mandated Corrective Action Plan to reduce occurrence and magnitude of wet weather peak flows at the WWTP that cause hydraulic overloads. The purpose of the project is to mitigate extraneous flow into the system, maintain DEP compliance, and obtain additional sewer allocations for growth within Township sewer service area.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>In 2017 a flow meter study was conducted throughout the system providing data on the areas contributing to excess wet weather flows. In 2018 a manhole inspection program was developed and implemented, along with smoke testing at the Northwestern Lehigh School District campus. In 2019 repairs to the on-site sanitary sewer system were performed by the school district, and LCA performed numerous collection system spot repairs to abate significant system leaks. In 2019 an updated internal CCTV inspection of the entire sewage collection system was performed, along with easement stabilization. In 2020 a manhole rehabilitation project repaired approx 180 structures in the system. Public and private lateral inspections and investigations will be performed in 2022, and starting in 2023 public and private side rehabilitation and repair projects will further address inflow and infiltration based on investigation findings.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
<p>Reducing I/I flow should result in a reduction of treatment plant operating costs by reducing volume of wastewater that must be conveyed through the plant processes. It is difficult to quantify amount of extraneous flow to be removed, and therefore quantifying cost savings is difficult. Exact costs to be determined.</p>

Project No.	SD-S-26
Project Name	LYNN TOWNSHIP INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM

Prior Project Cost	170,000
Estimated Project Costs: 2022-2027	
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 135,000
Professional Services	\$ 50,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 395,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 200,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	design
1st Year	2023	\$ 75,000	investigation & construction
2nd Year	2024	\$ 50,000	investigation & construction
3rd Year	2025	\$ 25,000	investigation & construction
4th Year	2026	\$ 25,000	study/investigation
5th Year	2027	\$ 25,000	study/investigation

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	PARK PUMP STATION REHABILITATION/IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2022	Project No.	SD-S-15
Location	LLRI-1, City of Allentown			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Regulatory	Preparer		CEV

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	<input checked="" type="checkbox"/> Comply with Regulatory Requirements
<input checked="" type="checkbox"/> Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	20	Project inception date	2016
Approx. No. of Customers Benefitted	**		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2024
Will the Project Require Obtaining Land Rights	No		

**= The Park Pump Station provides service to 7 WLI signatories and 3 of City signatories.

Detailed Project Description
Phase 1 improvements to the pump station included replacement of the existing pumps, suction and discharge side valves, pump speed controllers, motor control center (MCC) panel, SCADA system, wet well level instrumentation, building roof and force main drain valve. Also included are miscellaneous structural, HVAC and other improvements as outlined in Option 3 of the March 21, 2016 Park Pump Station Evaluation Technical Memorandum prepared by Arcadis. Construction of Phase 1 was completed in early 2020. Phase 2 of the station upgrade consists of replacement of the original backup diesel generator, which is nearing the end of its service life and slightly undersized for the upgraded station. The replacement unit will be natural gas powered, which will eliminate the need for diesel fuel storage in the environmentally sensitive area.

Project Drivers and Needs to be Met by the Project
Asset management is the primary driver for this project. Park Pump Station is a critical component of the sewerage infrastructure network in the region, serving ten municipalities. Its operation is critical to conveying wet weather flows and normal day flows, and significantly impacts the operation of Allentown's wastewater treatment plant at Kline's Island. The improvements are needed to restore the station to its design capacity, maintain level of service and extend service life into the foreseeable future.

Project Status - Describe what work, if any has been completed or underway for this project
An Evaluation Technical Memorandum was prepared by Arcadis which assessed various options for continued operation of the pump station. The recommendations outlined in Option 3 of the Memorandum were selected to improve the reliability and capacity of the pump station through 2025. The Phase 1 upgrade design was completed in late 2017, the project was bid in early 2018, construction phase commenced in mid-2018 and the project was completed in early 2020. Design of the replacement generator is to be completed in mid-2022, with construction phase anticipated to commence later in late 2022 and be completed in early 2025.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Explanation if Necessary
A new generator will insure station operation reliability and enhance resiliency in event of a catastrophic event that results in an extended period of electrical power outage. The long term cost of ownership of a natural gas versus a diesel generator is comparable and a triple bottom line analysis revealed that natural gas is preferable.

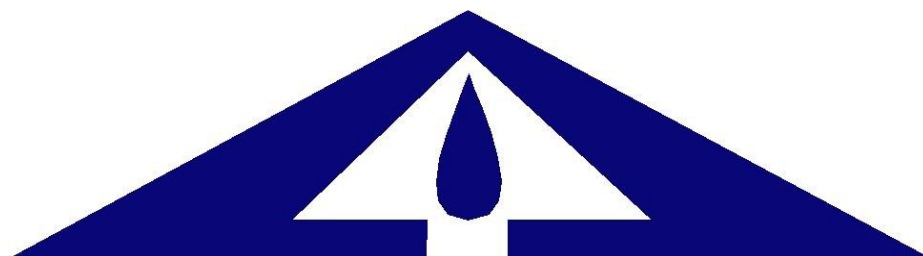
Project No.	SD-S-15
Project Name	PARK PUMP STATION REHABILITATION/IMPROVEMENTS

Prior Project Cost	4,000,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,800,000
Professional Services	\$ 200,000
Other	\$ 100,000
Contingencies	\$ 250,000
Total Project Cost	\$ 6,400,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
x	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 2,000,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 400,000	design, permitting, & begin construction phase 2 upgrade
1st Year	2023	\$ 1,500,000	construction
2nd Year	2024	\$ 500,000	construction
3rd Year	2025		
4th Year	2026	\$ -	
5th Year	2027	\$ -	



LEHIGH COUNTY AUTHORITY
ALLENTOWN, PA

DRAFT 5-YEAR CAPITAL PLAN

ADMINISTRATION

2023-2027

MARCH 2022

**LEHIGH COUNTY AUTHORITY
5-YEAR CAPITAL PLAN
2023-2027**

TABLE OF CONTENTS

	Page
Glossary of Acronyms & Terms	1-2
Capital Financing Justification	3
Department Summary	4
Project Details	5-18

2023-2027 Capital Plan

Glossary of Acronyms & Terms

The following is a listing of acronyms and terms used in the Capital Plan Summary and Project Detail Sheets.

LCA Water and/or Wastewater Divisions/Systems

LCA Water and/or Wastewater Divisions/Systems			
		Water	Wastewater
AD	Allentown Division	X	X
AWD	Arcadia West Division	X	X
BHD	Beverly Hills Division	X	
CLD	Central Lehigh Division	X	
CFD	Clear View Farms Division	X	
ECD	Emmaus Consecutive Division	X	
HHD	Heidelberg Heights Division	X	X
LLRI-1	Little Lehigh Relief Interceptor, Phase 1		X
LLRI-2	Little Lehigh Relief Interceptor, Phase 2		X
LTD	Lynn Township Division		X
MCD	Mill Creek Division	X	
MND	Madison Park Division	X	
NWD	North Whitehall Division	X	
PLD	Pine Lakes Division	X	
SSD	Sands Spring Division		X
UMD	Upper Milford Division	X	X
UMCD	Upper Central Milford Division (Buss Acres)	X	
WLI	Western Lehigh Interceptor		X
WTD	Washington Township Division	X	X
WWD	Wynnewood Division		X

Project Type

Project Type	Description
AO	Administrative Order
UW	Uncompleted Work ⁽¹⁾
S-7-MCI	Schedule-7 (<i>Lease Required</i>) Major Capital Improvement ⁽²⁾
LCA-MCI	LCA Developed Major Capital Improvement ⁽²⁾
COL	Change of Law ⁽³⁾
Regular	A project that does not fit in any of the aforementioned special categories

(1) *Uncompleted Work: City Projects that were supposed to be complete by the time of settlement. The City and LCA have reached an agreement for LCA to execute them.*

(2) *Major Capital Improvement: In accordance with the Lease, all Major Capital Improvements must be approved by the City.*

(3) *Change of Law: In accordance with the Change of Law Memorandum of Understanding*

Project Funding

Project Funding	Description
<i>LCA</i>	Funded by LCA
<i>100% Reimb</i>	All costs are 100% reimbursable by fees charged
<i>Fees & LCA</i>	Costs partly recovered through fees charged and partly funded by LCA
<i>Allentown</i>	Funded by the City of Allentown
<i>CCRC</i>	Capital Cost Recovery Charge ⁽¹⁾ ; Applies only to City approved MCI

(1) Capital Cost Recovery Charge: An on-going user fee that is above the rate caps set forth in the Lease to allow the recovery of the cost of an MCI. Rate payers are charged based upon usage.

Project Category

Projects have been categorized to identify the primary and secondary reasons for the need. In some cases there is no secondary reason that would be applicable.

Project Category	Description
<i>Regulatory</i>	Required to meet Regulatory requirements
<i>New Cust</i>	New Customers
<i>CA/OS</i>	Concession Lease/Operating Standards
<i>Master Plan</i>	Master Plan
<i>AM - Low</i>	Asset Management - Low Risk
<i>AM - Med</i>	Asset Management - Medium Risk
<i>AM - High</i>	Asset Management - High Risk
<i>AM - Varies</i>	Asset Management - Varies ⁽¹⁾
<i>Efficiency</i>	Efficiency
<i>Sys Imp</i>	System Improvement
<i>Rev Opprt</i>	Revenue Opportunity
<i>Planning</i>	Planning
<i>N/A</i>	Not Applicable

(1) Applies to Asset Management Projects, where there are multiple standalone sub-projects of varied levels of "risk".

Approval Stage

Approval Stage	Description
<i>A</i>	Annual Project, no approvals required
<i>S</i>	Study/Planning Phase
<i>D</i>	Design Phase
<i>C</i>	Construction/Implementation Phase
<i>E</i>	Entire Project
<i>V</i>	Various Phases
<i>P</i>	Pending Board approval

ADMINISTRATION

**ADMINISTRATION
5-YEAR CAPITAL PLAN
2023-2027**

CAPITAL FINANCING JUSTIFICATION

The Administrative projects of the Authority are funded through charge-backs to the various operating and capital budgets.

The Administrative projects are either a strictly Suburban Division (SD) project or a project which benefits both the City and Suburban Division (CON). In the case of the multi-division projects in the plan period, the total costs have been apportioned 88% to the Suburban Division and 12% to the Allentown Division.

Project SD-A-1 is an Information Technology (IT) project to upgrade the Suburban SCADA capabilities. Water fund operating reserves will be used to finance the projects with partial recovery through charge-backs to Authority wastewater funds.

Project CON-A-1 is an organization-wide project related to the annual upgrades of computer hardware and software.

Project CON-A-2 is an organizational-wide upgrade to the Geographic Information System (GIS).

Project CON-A-3 is an organization-wide update and implementation of the LCA IT Master Plan.

Project CON-A-4 is an organization-wide project to develop an electronic document management system.

Project CON-A-5 is an organization-wide project to add additional security and disaster recovery tools to the existing IT system.

Project CON-A-6 is an organization-wide project to upgrade the existing CMMS system.

Funding Sources for each project are shown below.

ADMINISTRATION	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>TOTAL</u>
Project Costs	<u>\$1,010,000</u>	<u>\$950,000</u>	<u>\$675,000</u>	<u>\$200,000</u>	<u>\$175,000</u>	<u>\$3,010,000</u>
Funding Sources:						
Operating/Capital Reserves	\$1,010,000	\$950,000	\$675,000	\$200,000	\$175,000	\$3,010,000
New Borrowing	-	-	-	-	-	-
Total Funding	<u>\$1,010,000</u>	<u>\$950,000</u>	<u>\$675,000</u>	<u>\$200,000</u>	<u>\$175,000</u>	<u>\$3,010,000</u>

LEHIGH COUNTY AUTHORITY
ADMINISTRATION
2023-2027 CAPITAL PROGRAM

Project #	Name or Title of Proposal	Prj. Category	Approvals Stage (1)	Plan Total Cost	This Capital Program							Prior Project Cost (2)	Future Project Cost (2)	Total Project Cost
					2022 Budget Approved	2023 Year 1	2024 Year 2	2025 Year 3	2026 Year 4	2027 Year 5	2023-2027 Total			
SD-A-1	SCADA Programming, Hardware Upgrades, Software & Training	AM - Varies	A	\$ 2,850,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 500,000	\$ 50,000	\$ 50,000	\$ 2,100,000	0	\$50,000	\$2,900,000
CON-A-1*	Computer System Hardware & Software Upgrades	AM - High	A	\$ 275,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 25,000	\$ 225,000	\$100,000		\$375,000
CON-A-2*	GIS Upgrades & Application Development	Efficiency	V	\$ 350,000	\$ 75,000	\$ 50,000	\$ 50,000	\$ 75,000	\$ 50,000	\$ 50,000	\$ 275,000	\$100,000	\$50,000	\$500,000
CON-A-3*	Information Technology Master Plan Update	Planning	A	\$ 200,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ -	\$ -	\$ -	\$ 100,000	\$340,000	\$0	\$540,000
CON-A-4*	Document Management	Efficiency	V	\$ 85,000	\$ 75,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ 10,000	\$25,000	\$0	\$110,000
CON-A-5*	Disaster Recovery/Security Upgrades	Efficiency	A	\$ 150,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 125,000	\$25,000	\$50,000	\$225,000
CON-A-6*	CMMS Upgrades	Efficiency	A	\$ 200,000	\$ 25,000	\$ 75,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 175,000	\$50,000	\$50,000	\$300,000
GRAND TOTAL				\$ 4,110,000	\$ 1,100,000	\$ 1,010,000	\$ 950,000	\$ 675,000	\$ 200,000	\$ 175,000	\$ 3,010,000	\$ 640,000	\$ 200,000	\$ 4,950,000

(*) CON = a Project that benefits both the Allentown and Suburban Divisions. All projects are LCA funded.
(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents
(2) If blank project cost is not applicable (annual project) or to be determined

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	SUPERVISORY CONTROL & DATA ACQUISITION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	SD-A-1
Location	Various LCA Divisions located in multiple municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Efficiency	Preparer		CM

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	<input type="checkbox"/> Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input checked="" type="checkbox"/> Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/>	Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input checked="" type="checkbox"/> Other (explain): Improve Operational Efficiencies

Additional Information			
Expected Useful Life (Years)	5	Project inception date	2010
Approx. No. of Customers Benefitted	*Varies		
Is this System part of a Common User Rate?	Yes	Anticipated Project completion date	2035
Will the Project Require Obtaining Land Rights	No		
*Dependent upon the system			

Detailed Project Description
This annual on-going project includes both programming and hardware enhancements to the SCADA system to provide reliable telemetry and effective/proactive/flexible control of our facilities. It also includes an upgrade to SCADA & Telog communications and radio replacement of Telco lines to reduce monthly Telco charges to resolve ongoing communication problems with critical facilities. Training on the Historian software package is also included. The larger scope of this project will include a study and design project that will result in a project plan to upgrade all of our Suburban SCADA stations.

Project Drivers and Needs to be Met by the Project
The SCADA system currently provides real-time data and control for CLD water facilities and WLI related wastewater facilities and must be updated. The Telog system provides real-time data (no control) for satellite water and wastewater systems. Both are necessary to allow efficient operation of the water and wastewater system facilities.

Project Status - Describe what work, if any has been completed or underway for this project
SCADA upgrades were completed at Pine Lakes and Crestwood water systems in 2017 and 2018.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-A-1
Project Name	SUPERVISORY CONTROL & DATA ACQUISITION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING

Prior Project Cost	N/A
Estimated Project Costs:	2023-2027
LCA Staff	\$ 200,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,000,000
Professional Services	\$ 500,000
Other	\$ -
Contingencies	\$ 150,000
Total Project Cost	\$ 2,850,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 2,100,000
--	---------------------

		Need	Phase of Work
2022 Budget		\$ 750,000	Multi year project upgrading Suburban SCADA stations
1st Year	2023	\$ 750,000	Multi year project upgrading Suburban SCADA stations
2nd Year	2024	\$ 750,000	Multi year project upgrading Suburban SCADA stations
3rd Year	2025	\$ 500,000	Multi year project upgrading Suburban SCADA stations
4th Year	2026	\$ 50,000	Multi year project upgrading Suburban SCADA stations
5th Year	2027	\$ 50,000	Multi year project upgrading Suburban SCADA stations

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	COMPUTER SYSTEM HARDWARE & SOFTWARE UPGRADES						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-1
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Efficiency	Preparer		PB

Purpose of Expenditure (check all that apply)	
New Facility	Correct Known or Potential Safety Issue
Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
Scheduled Replacement	Comply with Regulatory Requirements
Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	6	Project inception date	2010
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	Ongoing
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
This project includes both hardware and software costs for server replacements for units older than 6 years.

Project Drivers and Needs to be Met by the Project
Improved efficiencies will assist employees in becoming more productive.

Project Status - Describe what work, if any has been completed or underway for this project
Hardware replaced annually as needed. Software upgraded annually as needed.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-1
Project Name	COMPUTER SYSTEM HARDWARE & SOFTWARE UPGRADES

Prior Project Cost	\$60,000
Estimated Project Costs:	2023-2027
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 200,000
Professional Services	\$ 20,000
Other	\$ -
Contingencies	\$ 30,000
Total Project Cost	\$ 360,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 250,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 50,000	procurement
1st Year	2023	\$ 50,000	procurement
2nd Year	2024	\$ 50,000	procurement
3rd Year	2025	\$ 50,000	procurement
4th Year	2026	\$ 50,000	procurement
5th Year	2027	\$ 50,000	procurement

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	GEOGRAPHIC INFORMATION SYSTEM (GIS) UPGRADES & APPLICATION DEVELOPMENT						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-2
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	Sys Imp	Preparer		PB

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	N/A	Project inception date	1991
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	Ongoing
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
<p>This project will continue to support the development of the Authority's GIS system. The project scope includes implementation of ESRI's event server which will allow SCADA integration with the GIS system, replacement of the existing GIS network/framework which will allow advanced hydraulic modeling and outage solutions, upgrades to the web and mobile GIS platforms to enhance usability and functionality for internal staff, completion and adoption of a GIS Strategic Plan to assist with the utilization of all software and integrations, and enhanced security updates to all GIS systems.</p>

Project Drivers and Needs to be Met by the Project
<p>Adoption of an integrated and complete GIS system is critical for asset management and facility management. Advancements in geospatial technologies require updates on an annual basis. As part of LCA's 2020 Goals, a complete GIS system will help support the implementation of a CMMS system. Applications covered under this project include easement mapping and access, as-built mapping and access, and various internal project based applications to support all Departments.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Transition to the new utility network is currently underway. The adoption of ESRI's event server is underway and being configured with LCA's CMMS system. Multiple applications to support the operations of LCA are also under development.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-2
Project Name	GEOGRAPHIC INFORMATION SYSTEM (GIS) UPGRADES & APPLICATION DEVELOPMENT

Prior Project Cost	\$100,000
Estimated Project Costs:	2023-2027
LCA Staff	\$ 50,000
Land Acquisition	
Construction/Equipment	\$ 250,000
Professional Services	\$ 25,000
Other	
Contingencies	\$ 25,000
Total Project Cost	\$ 450,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 275,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 75,000	procurement
1st Year	2023	\$ 50,000	procurement
2nd Year	2024	\$ 50,000	procurement
3rd Year	2025	\$ 75,000	procurement
4th Year	2026	\$ 50,000	procurement
5th Year	2027	\$ 50,000	procurement

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	INFORMATION TECHNOLOGY MASTER PLAN UPDATE						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-3
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Planning	Secondary	Sys Imp	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	10	Project inception date	2016
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	Ongoing
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
This project will provide the guidance for update and implementation of the technology systems currently residing (or new systems) for LCA. It contains funding for investigation, purchase, implementation and support.

Project Drivers and Needs to be Met by the Project
The 2019 update identified needs in both technology and software support for LCA's employee base. Moving forward IT and supporting technology in a secure fashion is paramount. This project will support those needs.

Project Status - Describe what work, if any has been completed or underway for this project
IT Master Plan began in 2019 and will be finished in 2020.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-3
Project Name	INFORMATION TECHNOLOGY MASTER PLAN UPDATE

Prior Project Cost	\$340,000
Estimated Project Costs:	2023-2027
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 30,000
Professional Services	\$ 100,000
Other	\$ -
Contingencies	\$ 20,000
Total Project Cost	\$ 540,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 100,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 100,000	procurement
1st Year	2023	\$ 50,000	procurement
2nd Year	2024	\$ 50,000	procurement
3rd Year	2025	\$ -	
4th Year	2026	\$ -	
5th Year	2027	\$ -	

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	DOCUMENT MANAGEMENT						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-4
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	Sys Imp	Preparer		PB

Purpose of Expenditure (check all that apply)	
New Facility	Correct Known or Potential Safety Issue
Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
Scheduled Replacement	Comply with Regulatory Requirements
Improved Service	Equipment/Infrastructure at End of Useful Life
Study	<input checked="" type="checkbox"/> Other (explain): Increase Efficiencies

Additional Information			
Expected Useful Life (Years)	10	Project inception date	2008
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2022
Will the Project Require Obtaining Land Rights	No		

Detailed Project Description
This project provides for an Electronic Document Management System (EDMS) to store, search and share documents. This project does not plan for the imaging of existing paper documents.

Project Drivers and Needs to be Met by the Project
Readily available access to plans, reports and past correspondence will reduce research time. Storage space, files and cabinets for maintaining hard-copy documents will be minimized or eliminated. Digital, cross-referenced documents will improve accessibility and ease workflow.

Project Status - Describe what work, if any has been completed or underway for this project
Preliminary stages of this project began in 2018 and 2019.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-4
Project Name	DOCUMENT MANAGEMENT

Prior Project Cost	\$25,000
Estimated Project Costs: 2023-2027	
LCA Staff	\$ 15,000
Land Acquisition	\$ -
Construction/Equipment	\$ 10,000
Professional Services	\$ 50,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 110,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 10,000
--	------------------

	Need	Phase of Work
2022 Budget	\$ 75,000	procurement
1st Year 2023	\$ 10,000	procurement
2nd Year 2024	\$ -	
3rd Year 2025	\$ -	
4th Year 2026	\$ -	
5th Year 2027	\$ -	

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	DISASTER RECOVERY/SECURITY UPGRADES						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-5
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		CWM

Purpose of Expenditure (check all that apply)			
<input type="checkbox"/>	New Facility	<input checked="" type="checkbox"/>	Correct Known or Potential Safety Issue
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	<input type="checkbox"/>	Equipment Obsolete
<input type="checkbox"/>	Scheduled Replacement	<input type="checkbox"/>	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input type="checkbox"/>	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	<input type="checkbox"/>	Other (explain):

Additional Information			
Expected Useful Life (Years)	5	Project inception date	2018
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	Ongoing
Will the Project Require Obtaining Land Rights	NO		

Detailed Project Description
This project will cover several areas to increase or add security, as well as improve our disaster recovery options for catastrophic failure.

Project Drivers and Needs to be Met by the Project
This project will provide on-site back up as well as unlimited cloud storage of all back-ups. It will also encompass spam filters, real time anti virus scanning, as well as Exchange backup. As part of the disaster recovery, a large room scaled UPS system to ensure server uptime will be incorporated.

Project Status - Describe what work, if any has been completed or underway for this project
Project commenced in 2019.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-5
Project Name	DISASTER RECOVERY/SECURITY UPGRADES

Prior Project Cost	\$25,000
Estimated Project Costs:	2022-2027
LCA Staff	\$ 25,000
Land Acquisition	\$ -
Construction/Equipment	\$ 50,000
Professional Services	\$ 25,000
Other	\$ -
Contingencies	\$ 50,000
Total Project Cost	\$ 175,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 125,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	procurement
1st Year	2023	\$ 25,000	procurement
2nd Year	2024	\$ 25,000	procurement
3rd Year	2025	\$ 25,000	procurement
4th Year	2026	\$ 25,000	procurement
5th Year	2027	\$ 25,000	procurement

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	CMMS UPGRADES						
Budget Area	Administration	Department	IT	Date	1/15/2022	Project No.	CON-A-6
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		CWM

Purpose of Expenditure (check all that apply)		
<input type="checkbox"/>	New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input checked="" type="checkbox"/>	Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/>	Improved Service	<input checked="" type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/>	Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	5	Project inception date	2017
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2025
Will the Project Require Obtaining Land Rights	NO		

Detailed Project Description
<p>This project will upgrade multiple modules of the existing CMMS application, Cityworks. The modules include implementation of a complete inventory system, API integrations with the GIS system, development of an asset strategy plan, site upgrades, and additional security enhancements. This project will also provide more opportunities for automation of vertical asset management through the use of ESRI's Geoevent server and SCADA information.</p>

Project Drivers and Needs to be Met by the Project
<p>As part of LCA's 2020 Goals, this project will support the need for additional integrations, automation, and security to increase availability and reliability of the software. The project will also help initiate the development and adoption of an asset strategy through the identification and interpretation of multiple data integrations.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>This project commenced in 2019 with development of the existing Cityworks system and adoption of preventive maintenance practices in the City and Suburban Division. Multiple integrations have been completed; MUNIS integration, WINCAN integration, Customer Records Integration.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-6
Project Name	CMMS UPGRADES

Prior Project Cost	\$50,000
Estimated Project Costs:	2023-2027
LCA Staff	\$ 25,000
Land Acquisition	\$ -
Construction/Equipment	\$ 90,000
Professional Services	\$ 25,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 200,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
<input checked="" type="checkbox"/>	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 125,000
--	-------------------

		Need	Phase of Work
2022 Budget		\$ 25,000	procurement
1st Year	2023	\$ 25,000	procurement
2nd Year	2024	\$ 25,000	procurement
3rd Year	2025	\$ 25,000	procurement
4th Year	2026	\$ 25,000	procurement
5th Year	2027	\$ 25,000	procurement

MEMORANDUM

Date: March 28, 2022

To: Lehigh County Authority Board of Directors
From: Bryan Geissel, Project Engineer and Charles Volk, CCWO
Subject: Allentown Division – WWTP: Primary No. 1 Cleaning - Construction Phase

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization – Construction Phase	\$332,964
2 ⁽¹⁾	General Contract Award – Spectraserv Inc.	\$317,964

(1) Included in the Capital Project Authorization.

PROJECT OVERVIEW:

Cleaning of the digester tanks is performed on a 5 year cycle at KIWWTP. Primary Digester No. 1 was last cleaned in 2017 and is due for cleaning. The work is to be performed by an outside contractor.

FINANCIAL:

This Project will be funded by the LCA Allentown Division.

PROJECT STATUS:

The project was advertised for bid on March 6, 2022. A pre-bid meeting was held on March 9 and bids were received on March 22, 2022.

THIS APPROVAL – CONSTRUCTION PHASE:

The construction phase includes activities that are necessary to clean the Primary No. 1 Digester. The General Contractor will be responsible for all construction activities, including but not limited to the following:

- Removal of residuals content
- Dewatering and transfer of residuals content to trucks for LCA disposal
- Internal cleaning of digester with high pressure plant utility water
- Replacement of Pearth mixing system compressor
- Replacement of digested sludge sample lines (4 each)

The design engineer will be responsible for periodic oversight of the construction, which will be supplemented by in-house project management provided by LCA.

BIDDING SUMMARY:

The project requires a General Construction (GC) Contract. The bid results are summarized below:

Bidder	Bid Results
Spectraserv Inc.	\$317,964
Syangro Central, LLC	\$486,244
Denali Water Solutions, LLC	\$513,050

Based upon the review of the bids, we recommend award of the General Construction contract to Spectraserv, Inc., subject to the receipt of the necessary Performance Bonds, Insurance, and other required documentation. Spectraserv, located in Kearney, NJ, specializes in the transport and disposal of wastewater residuals, and has been in business for approximately 60 years. LCA staff has reviewed the bid documents and supplied references and Spectraserv recommend award of the contract to Spectraserv.

PROFESSIONAL SERVICES:

GHD Inc. has been our design consultant on this project (and prior digester cleaning and rehabilitation projects) and will provide construction engineering services for the construction phase of the project. Their original proposal included construction phase services so no additional authorization required for the consultant.

PROJECT SCHEDULE:

The specifications require that the tank cleaning and associated rehabilitation work be completed within 45 days of the Notice to Proceed, and that the furnishing of the replacement compressor be completed within 210 days from Notice to Proceed.

FUTURE AUTHORIZATIONS:

No future authorizations are anticipated for this project.

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.:	AD-S-A	BUDGET FUND:	Allentown Div\Wastewater\Capital
PROJECT TITLE:	Allentown Division – WWTP: Primary No 1 Digester Cleaning - Construction Phase		PROJECT TYPE:
THIS AUTHORIZATION:	\$332,964	<input checked="" type="checkbox"/>	Construction
TO DATE (W/ ABOVE)	\$365,197	<input type="checkbox"/>	Engineering Study
		<input type="checkbox"/>	Equipment Purchase
		<input type="checkbox"/>	Amendment No. 1

DESCRIPTION AND BENEFITS:

Cleaning of the digester tanks is performed on a 5 year cycle at KIWWTP. Primary Digester No. 1 is due for cleaning. This work is to be performed by an outside contractor. This capital project will be funded by the LCA Allentown Division. Please see attached Board Memo for further project details.

Authorization Status:

Previous Authorizations	
Design/Bid Phase	\$32,233

Requested This Authorization	
Construction Phase	
Staff	\$5,000
Construction Contractor	\$317,964
Contingency	10,000
Total This Authorization	\$332,964

Future Authorizations	None Anticipated
Total Estimated Project	\$365,197

REVIEW AND APPROVALS:

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

**LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS
FEBRUARY 2022**

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUMMARY
For the Period Ended February 28, 2022

	Consolidated Financial Statements														
	Month					Year To Date					FULL YEAR				
	Actual	Q1 FC	Prior Year	FC Var	PY Var	Actual	Q1 FC	Prior Year	FC Var	PY Var	Q1 FC	Budget	Prior Year	Bud Var	PY Var
Income Statement															
Suburban Water	215,096	162,188	(118,579)	52,907	333,675	375,674	322,767	(20,695)	52,907	396,369	2,159,847	2,094,223	2,116,717	65,624	43,130
Suburban Wastewater	132,289	154,071	314,630	(21,782)	(182,341)	59,412	81,194	528,359	(21,782)	(468,948)	1,628,104	1,788,879	(206,406)	(160,775)	1,834,510
City Division	1,618,526	1,402,666	587,170	215,860	1,031,356	2,047,058	1,831,199	1,020,513	215,860	1,026,545	2,115,567	2,194,319	3,897,356	(78,752)	(1,781,789)
Total LCA	1,965,910	1,718,925	783,221	246,985	1,182,690	2,482,144	2,235,159	1,528,177	246,985	953,967	5,903,518	6,077,421	5,807,667	(173,903)	95,851
Cash Flow Statement															
Suburban Water	379,487	328,134	530,120	51,353	(150,633)	94,376	43,024	190,081	51,353	(95,705)	511,304	402,292	(2,774,576)	109,012	3,285,880
Suburban Wastewater	555,862	357,685	974,727	198,178	(418,865)	2,127,322	1,929,144	77,518	198,178	2,049,804	4,318,098	4,353,353	(1,043,928)	(35,255)	5,362,026
City Division	2,048,084	2,090,974	1,625,104	(42,890)	422,980	175,364	218,254	3,379,239	(42,890)	(3,203,875)	5,508,265	5,439,552	9,094,924	68,713	(3,586,659)
Total LCA	2,983,434	2,776,792	3,129,951	206,641	(146,517)	2,397,062	2,190,421	3,646,838	206,641	(1,249,776)	10,337,667	10,195,198	5,276,420	142,469	5,061,247
Debt Service Coverage Ratio															
Suburban Water	2.18	1.93	1.55	0.25	0.63	2.07	1.94	2.37	0.12	(0.31)	2.03	2.01	3.86	0.02	(1.83)
Suburban Wastewater	10.87	10.67	12.04	0.20	(1.17)	9.22	9.12	11.19	0.10	(1.97)	10.72	10.82	6.77	(0.09)	3.96
City Division	2.74	2.62	2.09	0.12	0.65	2.28	2.22	2.03	0.06	0.25	1.66	1.67	1.87	(0.01)	(0.21)

LEHIGH COUNTY AUTHORITY
CONSOLIDATED FINANCIAL STATEMENTS
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES	Consolidated Financial Statements															
	Month				Year To Date				Q1 FULL YEAR FORECAST				Full Year Budget			
	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA
Operating Revenues:																
User Charges	1,058,158	1,493,261	4,278,571	6,829,989	2,112,170	2,678,718	7,820,555	12,611,442	15,206,012	20,192,457	46,460,984	81,859,453	15,321,204	20,282,051	46,388,630	81,991,885
Connection & System Charges	38,239	56,391	316,575	411,205	65,630	230,723	454,450	750,803	930,391	932,549	4,251,925	6,114,864	933,476	875,254	4,488,054	6,296,784
Other Miscellaneous Revenues	1,035	30	3,180	4,245	3,825	30	7,470	11,325	32,790	2,000	69,290	104,080	33,078	2,247	67,475	102,800
Total Operating Revenues	1,097,432	1,549,682	4,598,326	7,245,439	2,181,625	2,909,471	8,282,475	13,373,570	16,169,193	21,127,006	50,782,199	88,078,397	16,287,758	21,159,552	50,944,159	88,391,469
Operating Expenses:																
Personnel	126,284	88,296	458,859	673,438	405,766	194,841	1,449,970	2,050,577	3,148,213	1,536,599	12,702,947	17,387,759	3,135,717	1,557,088	12,623,714	17,316,515
Shared Services - General & Administrative	37,946	17,783	107,978	163,706	71,168	30,441	229,896	331,504	773,222	232,658	1,915,918	2,921,798	777,905	230,022	1,872,369	2,880,296
Utilities	42,481	25,464	126,279	194,224	83,041	53,396	285,250	421,687	522,560	354,933	1,975,971	2,853,463	520,914	355,937	2,037,742	2,914,594
Materials and Supplies	41,211	30,825	182,382	254,419	48,569	34,946	226,686	310,201	816,358	498,121	2,349,304	3,663,782	816,837	496,550	2,334,092	3,647,479
Miscellaneous Services	277,153	469,883	140,348	887,384	489,844	977,259	160,495	1,627,597	4,608,691	6,851,375	2,063,147	13,523,213	4,813,534	6,804,359	2,184,774	13,802,667
Treatment and Transportation	-	230,000	-	230,000	-	460,000	-	460,000	-	3,846,000	13,000	3,859,000	-	3,844,405	13,800	3,858,205
Depreciation and Amortization	251,607	514,641	521,492	1,287,741	499,932	1,032,482	1,043,067	2,575,481	2,978,325	6,030,840	6,195,575	15,204,741	2,978,453	5,996,555	6,178,570	15,153,577
Major Maintenance Expenses	1,576	2,182	48,718	52,476	2,098	3,079	51,739	56,916	522	3,079	4,206,200	4,209,801	-	-	4,206,200	4,206,200
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	778,258	1,379,074	1,586,056	3,743,388	1,600,417	2,786,444	3,447,104	7,833,964	12,847,890	19,353,605	31,422,062	63,623,557	13,043,359	19,284,917	31,451,261	63,779,537
Net Operating Profit	319,174	170,608	3,012,270	3,502,051	581,208	123,027	4,835,372	5,539,607	3,321,303	1,773,400	19,360,137	24,454,840	3,244,399	1,874,636	19,492,897	24,611,931
Non-Operating Income (Expense)																
Interest Income	3,253	3,484	691	7,428	7,029	8,120	559	15,709	50,776	48,637	156,868	256,281	50,125	87,943	176,419	314,487
Interest (Expense)	(100,565)	(15,207)	(1,394,435)	(1,510,206)	(200,731)	(31,532)	(2,788,873)	(3,021,136)	(1,207,166)	(180,326)	(17,401,438)	(18,788,930)	(1,200,301)	(173,721)	(17,474,997)	(18,849,019)
Other Miscellaneous	(6,767)	(26,596)	-	(33,362)	(11,832)	(40,203)	-	(52,035)	(5,066)	(13,607)	-	(18,673)	-	22	-	22
Net Non-Operating Income (Expense)	(104,078)	(38,319)	(1,393,744)	(1,536,141)	(205,534)	(63,615)	(2,788,314)	(3,057,463)	(1,161,456)	(145,296)	(17,244,570)	(18,551,322)	(1,150,176)	(85,756)	(17,298,578)	(18,534,510)
Net Income (Loss)	215,096	132,289	1,618,526	1,965,910	375,674	59,412	2,047,058	2,482,144	2,159,847	1,628,104	2,115,567	5,903,518	2,094,223	1,788,879	2,194,319	6,077,421
CASH FLOW STATEMENT																
Cash Flows From Operating Activities																
Operating Revenues	1,097,432	1,549,682	4,598,326	7,245,439	2,181,625	2,909,471	8,282,475	13,373,570	16,169,193	21,127,006	50,782,199	88,078,397	16,287,758	21,159,552	50,944,159	88,391,469
Operating Expenses (ex D&A)	(526,651)	(864,433)	(1,064,564)	(2,455,647)	(1,100,485)	(1,753,962)	(2,404,036)	(5,258,483)	(9,869,565)	(13,322,765)	(25,226,487)	(48,418,817)	(10,064,907)	(13,288,362)	(25,272,691)	(48,625,960)
Non-Cash Working Capital Changes	164,946	(774,644)	(1,062,995)	(1,672,693)	(482,808)	539,198	(5,196,003)	(5,139,613)	152,239	269,843	2,003,997	2,426,079	(332,694)	(0)	2,197,478	1,864,783
Net Cash Provided by (Used In) Operating Activities	735,726	(89,395)	2,470,767	3,117,098	598,332	1,694,707	682,436	2,975,475	6,451,867	8,074,084	27,559,709	42,085,660	5,890,157	7,871,190	27,868,945	41,630,292
Cash Flows From Financing Activities																
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	3,075,000	-	1,200,000	4,275,000	3,075,000	-	1,200,000	4,275,000
Interest Payments	(1,202)	(11,776)	-	(12,978)	(2,437)	(23,957)	-	(26,394)	(1,200,337)	(180,703)	(12,799,531)	(14,180,571)	(1,200,301)	(173,721)	(12,799,531)	(14,173,553)
Principal Payments	(16,803)	(46,441)	-	(63,244)	(33,572)	(92,788)	-	(126,360)	(1,924,958)	(550,392)	(2,660,831)	(5,136,181)	(1,925,189)	(562,081)	(2,660,831)	(5,148,101)
Net Cash Provided by (Used In) Financing Activities	(18,005)	(58,217)	-	(76,222)	(36,010)	(116,745)	-	(152,755)	(50,295)	(731,095)	(14,260,362)	(15,041,752)	(50,490)	(735,802)	(14,260,362)	(15,046,654)
Cash Flows from Capital and Related Activities																
Non-Operating Income (Expenses)	(6,767)	(26,596)	-	(33,362)	(11,832)	(40,203)	-	(52,035)	(5,066)	(13,607)	(1,286,650)	(1,305,323)	-	22	(1,286,650)	(1,286,628)
Capital Expenditures, net	(334,721)	(215,413)	(423,374)	(973,508)	(463,142)	(360,558)	(507,631)	(1,331,331)	(5,935,978)	(3,059,921)	(6,661,300)	(15,657,199)	(5,487,500)	(2,870,000)	(7,058,800)	(15,416,300)
Net Cash Provided By (Used In) Capital and Related Activities	(341,488)	(242,009)	(423,374)	(1,006,870)	(474,975)	(400,761)	(507,631)	(1,383,366)	(5,941,044)	(3,073,528)	(7,947,950)	(16,962,522)	(5,487,500)	(2,869,978)	(8,345,450)	(16,702,928)
Cash Flows From Investing Activities																
Investments Converting To Cash	249,000	942,000	-	1,191,000	249,000	1,677,000	-	1,926,000	-	1,677,000	-	1,677,000	-	-	-	-
Purchased Investments	(249,000)	-	-	(249,000)	(249,000)	(735,000)	-	(984,000)	-	(1,677,000)	-	(1,677,000)	-	-	-	-
Interest Income	3,253	3,484	691	7,428	7,029	8,120	559	15,709	50,776	48,637	156,868	256,281	50,125	87,943	176,419	314,487
Net Cash Provided By (Used In) Investing Activities	3,253	945,484	691	949,428	7,029	950,120	559	957,709	50,776	48,637	156,868	256,281	50,125	87,943	176,419	314,487
FUND NET CASH FLOWS	379,487	555,862	2,048,084	2,983,434	94,376	2,127,322	175,364	2,397,062	511,304	4,318,098	5,508,265	10,337,667	402,292	4,353,353	5,439,552	10,195,198
DEBT SERVICE RATIO																
Debt Service Ratio (Indenture Based)																
Total Operating Revenues	1,058,158	1,493,261	4,278,571	6,829,989	2,112,170	2,678,718	7,820,555	12,611,442	15,206,012	20,192,457	46,460,984	81,859,453	15,321,204	20,282,051	46,388,630	81,991,885
Total Operating Expenses (Cash Based)	(526,651)	(864,433)	(1,064,564)	(2,455,647)	(1,100,485)	(1,753,962)	(2,404,036)	(5,258,483)	(9,869,565)	(13,322,765)	(25,226,487)	(48,418,817)	(10,064,907)	(13,288,362)	(25,272,691)	(48,625,960)
Interest Income	3,253	3,484	691	7,428	7,029	8,120	559	15,709	50,776	48,637	156,868	256,281	50,125	87,943	176,419	314,487
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-Operating Revenues (Expenses)	32,507	29,825	319,755	382,087	57,623	190,550	461,920	710,093	958,115	920,941	4,321,215	6,200,271	966,554	877,523	4,555,529	6,399,606
Cash Available For Debt Service	567,267	662,137	3,534,453	4,763,857	1,076,336	1,123,426	5,878,998	8,078,761	6,345,338	7,839,270	25,712,580	39,897,188	6,272,976	7,959,156	25,847,886	40,080,018
Interest Paid	100,028	15,059	1,066,628	1,181,714	200,056	30,117	2,133,255	2,363,428	1,200,337	180,703	12,799,531	14,180,571	1,200,301	173,721	12,799,531	14,173,553
Debt Retirement (Principal Payments)	160,413	45,866	221,736	428,015	320,862	91,732	443,472	856,030	1,924,958	550,392	2,660,831	5,136,181	1,925,189	562,081	2,660,831	5,148,101
Total Debt Service	260,441	60,925	1,288,364	1,609,729	520,883	121,849	2,576,727	3,219,459	3,125,295	731,095	15,460,362	19,316,752	3,125,490	735,802	15,460,362	19,321,654
Debt Service Ratio	2.18	10.87	2.74	2.96	2.07	9.22	2.28	2.51	2.03	10.72	1.66	2.07	2.01	10.82	1.67	2.07

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WATER
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES	Suburban - Water														
	Month					Year To Date					Full Year				
	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Q1 FC	Budget	Prior Yr	Bud Var	PY Var
Operating Revenues:															
User Charges	1,058,158	1,029,000	831,752	29,158	226,405	2,112,170	2,083,012	1,783,549	29,158	328,621	15,206,012	15,321,204	12,433,466	(115,192)	2,772,546
Connection & System Charges	38,239	27,000	31,323	11,239	6,916	65,630	54,391	64,486	11,239	1,144	930,391	933,476	1,555,555	(3,085)	(627,164)
Other Miscellaneous Revenues	1,035	1,000	1,185	35	(150)	3,825	3,790	4,440	35	(615)	32,790	33,078	56,174	(288)	(23,384)
Total Operating Revenues	1,097,432	1,057,000	864,260	40,432	233,171	2,181,625	2,141,193	1,852,475	40,432	329,150	16,169,193	16,287,758	14,047,195	(118,565)	2,121,998
Operating Expenses:															
Personnel	126,284	131,812	266,319	5,528	140,035	405,766	411,294	535,980	5,528	130,214	3,148,213	3,135,717	3,168,152	(12,496)	19,939
Shared Services - General & Administrative	37,946	63,000	41,147	25,054	3,201	71,168	96,222	65,065	25,054	(6,102)	773,222	777,905	506,957	4,683	(266,265)
Utilities	42,481	49,000	39,641	6,519	(2,841)	83,041	89,560	72,380	6,519	(10,661)	522,560	520,914	423,326	(1,645)	(99,233)
Materials and Supplies	41,211	33,000	31,305	(8,211)	(9,906)	48,569	40,358	35,901	(8,211)	(12,668)	816,358	816,837	468,996	479	(347,361)
Miscellaneous Services	277,153	278,000	283,990	847	6,837	489,844	490,691	519,878	847	30,034	4,608,691	4,813,534	3,316,098	204,843	(1,292,593)
Treatment and Transportation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation and Amortization	251,607	247,000	217,141	(4,607)	(34,466)	499,932	495,325	434,282	(4,607)	(65,650)	2,978,325	2,978,453	2,617,338	128	(360,987)
Major Maintenance Expenses	1,576	-	54	(1,576)	(1,522)	2,098	522	999	(1,576)	(1,099)	522	-	8,747	(522)	8,225
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	778,258	801,812	879,597	23,554	101,339	1,600,417	1,623,970	1,664,485	23,554	64,068	12,847,890	13,043,359	10,509,615	195,469	(2,338,275)
Net Operating Profit	319,174	255,188	(15,337)	63,985	334,510	581,208	517,223	187,990	63,985	393,218	3,321,303	3,244,399	3,537,580	76,905	(216,277)
Non-Operating Income (Expense)															
Interest Income	3,253	1,000	1,136	2,253	2,118	7,029	4,776	2,501	2,253	4,528	50,776	50,125	47,412	650	3,363
Interest (Expense)	(100,565)	(94,000)	(103,318)	(6,565)	2,753	(200,731)	(194,166)	(206,689)	(6,565)	5,958	(1,207,166)	(1,200,301)	(1,314,348)	(6,865)	107,182
Other Miscellaneous	(6,767)	-	(1,061)	(6,767)	(5,706)	(11,832)	(5,066)	(4,497)	(6,767)	(7,335)	(5,066)	-	(153,927)	(5,066)	148,861
Net Non-Operating Income (Expense)	(104,078)	(93,000)	(103,243)	(11,078)	(835)	(205,534)	(194,456)	(208,685)	(11,078)	3,151	(1,161,456)	(1,150,176)	(1,420,863)	(11,280)	259,407
Net Income (Loss)	215,096	162,188	(118,579)	52,907	333,675	375,674	322,767	(20,695)	52,907	396,369	2,159,847	2,094,223	2,116,717	65,624	43,130
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	1,097,432	1,057,000	864,260	40,432	233,171	2,181,625	2,141,193	1,852,475	40,432	329,150	16,169,193	16,287,758	14,047,195	(118,565)	2,121,998
Operating Expenses (ex D&A)	(526,651)	(554,812)	(662,456)	28,161	135,805	(1,100,485)	(1,128,646)	(1,230,203)	28,161	129,718	(9,869,565)	(10,064,907)	(7,892,277)	195,342	(1,977,288)
Non-Cash Working Capital Changes	164,946	164,946	454,655	(0)	(289,709)	(482,808)	(482,808)	(78,015)	(0)	(404,793)	152,239	(332,694)	(2,587,455)	484,933	2,739,694
Net Cash Provided by (Used in) Operating Activities	735,726	667,134	656,459	68,592	79,267	598,332	529,740	544,257	68,592	54,075	6,451,867	5,890,157	3,567,463	561,710	2,884,404
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	3,075,000	3,075,000	21,679,902	-	(18,604,902)
Interest Payments	(1,202)	-	(3,734)	(1,202)	2,532	(2,437)	(1,236)	(7,523)	(1,201)	5,085	(1,200,337)	(1,200,301)	(1,344,261)	(36)	143,924
Principal Payments	(16,803)	-	(31,284)	(16,803)	14,481	(33,572)	(16,769)	(62,512)	(16,803)	28,940	(1,924,958)	(1,925,189)	(21,902,961)	231	19,978,003
Net Cash Provided by (Used in) Financing Activities	(18,005)	-	(35,017)	(18,005)	17,013	(36,010)	(18,005)	(70,035)	(18,005)	34,025	(50,295)	(50,490)	(1,567,319)	195	1,517,024
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	(6,767)	-	(1,061)	(6,767)	(5,706)	(11,832)	(5,066)	(4,497)	(6,767)	(7,335)	(5,066)	-	(153,927)	(5,066)	148,861
Capital Expenditures, net	(334,721)	(340,000)	(91,397)	5,279	(243,324)	(463,142)	(468,421)	(282,144)	5,279	(180,998)	(5,935,978)	(5,487,500)	(4,667,888)	(448,478)	(1,268,090)
Net Cash Provided By (Used In) Capital and Related Activities	(341,488)	(340,000)	(92,458)	(1,488)	(249,030)	(474,975)	(473,487)	(286,642)	(1,488)	(188,333)	(5,941,044)	(5,487,500)	(4,821,815)	(453,544)	(1,119,229)
Cash Flows From Investing Activities															
Investments Converting To Cash	249,000	-	-	249,000	249,000	249,000	-	-	249,000	249,000	-	-	493,682	-	(493,682)
Purchased Invesments	(249,000)	-	-	(249,000)	(249,000)	(249,000)	-	-	(249,000)	(249,000)	-	-	(494,000)	-	494,000
Interest Income	3,253	1,000	1,136	2,253	2,118	7,029	4,776	2,501	2,253	4,528	50,776	50,125	47,412	650	3,363
Net Cash Provided By (Used In) Investing Activities	3,253	1,000	1,136	2,253	2,118	7,029	4,776	2,501	2,253	4,528	50,776	50,125	47,095	650	3,681
FUND NET CASH FLOWS	379,487	328,134	530,120	51,353	(150,633)	94,376	43,024	190,081	51,353	(95,705)	511,304	402,292	(2,774,576)	109,012	3,285,880
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	1,058,158	1,029,000	831,752	29,158	226,405	2,112,170	2,083,012	1,783,549	29,158	328,621	15,206,012	15,321,204	12,433,466	(115,192)	2,772,546
Operating Expenses (Cash Based)	(526,651)	(554,812)	(662,456)	28,161	135,805	(1,100,485)	(1,128,646)	(1,230,203)	28,161	129,718	(9,869,565)	(10,064,907)	(7,892,277)	195,342	(1,977,288)
Interest Income	3,253	1,000	1,136	2,253	2,118	7,029	4,776	2,501	2,253	4,528	50,776	50,125	47,412	650	3,363
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	32,507	28,000	31,447	4,507	1,060	57,623	53,115	64,429	4,507	(6,806)	958,115	966,554	1,459,802	(8,439)	(501,687)
Cash Available For Debt Service	567,267	503,188	201,879	64,079	365,388	1,076,336	1,012,257	620,275	64,079	456,061	6,345,338	6,272,976	6,048,403	72,362	296,935
Interest Paid	100,028	100,028	112,022	-	(11,994)	200,056	200,056	224,043	-	(23,987)	1,200,337	1,200,301	1,344,261	36	(143,924)
Debt Retirement (Principal Payments)	160,413	160,432	18,588	(19)	141,825	320,826	320,826	37,176	-	283,650	1,924,958	1,925,189	2,223,059	(231)	1,701,899
Total Debt Service	260,441	260,461	130,610	(19)	129,831	520,883	520,883	261,220	-	259,663	3,125,295	3,125,490	1,567,319	(195)	1,557,976
Debt Service Ratio	2.18	1.93	1.55	0.25	0.63	2.07	1.94	2.37	0.12	(0.31)	2.03	2.01	3.86	0.02	(1.83)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES

Operating Revenues:

User Charges
Connection & System Charges
Other Miscellaneous Revenues

Total Operating Revenues

Operating Expenses:

Personnel
Shared Services - General & Administrative
Utilities
Materials and Supplies
Miscellaneous Services
Treatment and Transportation
Depreciation and Amortization
Major Maintenance Expenses
Other Miscellaneous

Total Operating Expenses

Net Operating Profit

Non-Operating Income (Expense)

Interest Income
Interest (Expense)
Other Miscellaneous

Net Non-Operating Income (Expense)

Net Income (Loss)

CASH FLOW STATEMENT

Cash Flows From Operating Activities

Operating Revenues
Operating Expenses (ex D&A)
Non-Cash Working Capital Changes

Net Cash Provided by (Used in) Operating Activities

Cash Flows From Financing Activities

Capital Contributions
Proceeds New Borrowing
Interest Payments
Principal Payments

Net Cash Provided by (Used in) Financing Activities

Cash Flows from Capital and Related Activities

Non-Operating Income (Expenses)
Capital Expenditures, net

Net Cash Provided By (Used In) Capital and Related Activities

Cash Flows From Investing Activities

Investments Converting To Cash
Purchased Investments
Interest Income

Net Cash Provided By (Used In) Investing Activities

FUND NET CASH FLOWS

Suburban - Water				
Actual	Q1 FC	FC Var	Comments	
1,058,158	1,029,000	29,158		
38,239	27,000	11,239		
1,035	1,000	35		
1,097,432	1,057,000	40,432	Higher user charges and higher system charges	
126,284	131,812	5,528		
37,946	63,000	25,054		
42,481	49,000	6,519		
41,211	33,000	(8,211)		
277,153	278,000	847		
-	-	-		
251,607	247,000	(4,607)		
1,576	-	(1,576)		
-	-	-		
778,258	801,812	23,554	Lower G&A allocated in	
319,174	255,188	63,985	Higher operating revenues along with lower operating expenses	
3,253	1,000	2,253		
(100,565)	(94,000)	(6,565)		
(6,767)	-	(6,767)		
(104,078)	(93,000)	(11,078)	Higher interest expenses and unfavorable investment losses	
215,096	162,188	52,907	Higher net operating profit partly eroded by unfavorable financial related activity	
1,097,432	1,057,000	40,432		
(526,651)	(554,812)	28,161		
164,946	164,946	(0)		
735,726	667,134	68,592	Higher operating revenues along with lower operating expenses	
-	-	-		
-	-	-		
(1,202)	-	(1,202)		
(16,803)	-	(16,803)		
(18,005)	-	(18,005)	Higher principal payments	
(6,767)	-	(6,767)		
(334,721)	(340,000)	5,279		
(341,488)	(340,000)	(1,488)	No major variance	
249,000	-	249,000		
(249,000)	-	(249,000)		
3,253	1,000	2,253		
3,253	1,000	2,253	No major variance	
379,487	328,134	51,353	Higher cash from operations partly negated by higher debt service	

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WASTEWATER
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES	Suburban - Wastewater														
	Month					Year To Date					Full Year				
	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Q1 FC	Budget	Prior Yr	Bud Var	PY Var
Operating Revenues:															
User Charges	1,493,261	1,472,000	1,480,955	21,261	12,306	2,678,718	2,657,457	2,798,875	21,261	(120,158)	20,192,457	20,282,051	16,094,968	(89,594)	4,097,489
Connection & System Charges	56,391	85,187	84,344	(28,796)	(27,953)	230,723	259,519	200,222	(28,796)	30,501	932,549	875,254	1,055,331	57,295	(122,782)
Other Miscellaneous Revenues	30	-	75	30	(45)	30	-	105	30	(75)	2,000	2,247	45,691	(247)	(43,691)
Total Operating Revenues	1,549,682	1,557,187	1,565,374	(7,505)	(15,692)	2,909,471	2,916,976	2,999,203	(7,505)	(89,732)	21,127,006	21,159,552	17,195,989	(32,547)	3,931,016
Operating Expenses:															
Personnel	88,296	130,935	112,785	42,639	24,489	194,841	237,480	220,436	42,639	25,594	1,536,599	1,557,088	1,321,752	20,489	(214,848)
Shared Services - General & Administrative	17,783	19,000	17,207	1,217	(576)	30,441	31,658	26,751	1,217	(3,690)	232,658	230,022	211,387	(2,635)	(21,271)
Utilities	25,464	37,000	28,318	11,536	2,855	53,396	64,933	49,311	11,536	(4,085)	354,933	355,937	269,553	1,005	(85,379)
Materials and Supplies	30,825	37,000	14,715	6,175	(16,111)	34,946	41,121	16,048	6,175	(18,898)	498,121	496,550	233,440	(1,571)	(264,681)
Miscellaneous Services	469,883	455,000	446,310	(14,883)	(23,573)	977,259	962,375	900,814	(14,883)	(76,445)	6,851,375	6,804,359	6,376,259	(47,016)	(475,116)
Treatment and Transportation	230,000	230,000	231,849	-	1,849	460,000	460,000	461,849	-	1,849	3,846,000	3,844,405	3,875,990	(1,595)	29,990
Depreciation and Amortization	514,641	481,000	384,727	(33,641)	(129,914)	1,032,482	998,840	769,454	(33,641)	(263,028)	6,030,840	5,996,555	4,794,108	(34,286)	(1,236,733)
Major Maintenance Expenses	2,182	2,182	4,805	0	2,624	3,079	3,079	7,337	0	4,258	3,079	-	133,347	(3,079)	130,268
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	1,379,074	1,392,117	1,240,716	13,043	(138,358)	2,786,444	2,799,486	2,451,999	13,043	(334,445)	19,353,605	19,284,917	17,215,836	(68,689)	(2,137,769)
Net Operating Profit	170,608	165,071	324,658	5,537	(154,050)	123,027	117,490	547,204	5,537	(424,177)	1,773,400	1,874,636	(19,847)	(101,235)	1,793,247
Non-Operating Income (Expense)															
Interest Income	3,484	4,000	8,937	(516)	(5,454)	8,120	8,637	18,953	(516)	(10,832)	48,637	87,943	81,664	(39,306)	(33,027)
Interest (Expense)	(15,207)	(15,000)	(12,436)	(207)	(2,771)	(31,532)	(31,326)	(25,301)	(207)	(6,231)	(180,326)	(173,721)	(213,026)	(6,604)	32,700
Other Miscellaneous	(26,596)	-	(6,529)	(26,596)	(20,067)	(40,203)	(13,607)	(12,496)	(26,596)	(27,707)	(13,607)	22	(55,198)	(13,630)	41,590
Net Non-Operating Income (Expense)	(38,319)	(11,000)	(10,028)	(27,319)	(28,291)	(63,615)	(36,296)	(18,844)	(27,319)	(44,771)	(145,296)	(85,756)	(186,559)	(59,540)	41,263
Net Income (Loss)	132,289	154,071	314,630	(21,782)	(182,341)	59,412	81,194	528,359	(21,782)	(468,948)	1,628,104	1,788,879	(206,406)	(160,775)	1,834,510
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	1,549,682	1,557,187	1,565,374	(7,505)	(15,692)	2,909,471	2,916,976	2,999,203	(7,505)	(89,732)	21,127,006	21,159,552	17,195,989	(32,547)	3,931,016
Operating Expenses (ex D&A)	(864,433)	(911,117)	(855,989)	46,684	(8,444)	(1,753,962)	(1,800,646)	(1,682,545)	46,684	(71,417)	(13,322,765)	(13,288,362)	(12,421,728)	(34,403)	(901,037)
Non-Cash Working Capital Changes	(774,644)	(774,644)	404,465	(0)	(1,179,109)	539,198	539,199	(261,364)	(1)	800,563	269,843	(0)	(261,814)	269,844	531,658
Net Cash Provided by (Used in) Operating Activities	(89,395)	(128,573)	1,113,850	39,178	(1,203,245)	1,694,707	1,655,530	1,055,293	39,178	639,414	8,074,084	7,871,190	4,512,447	202,894	3,561,637
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Payments	(11,776)	(12,439)	(12,439)	663	663	(23,957)	(24,620)	(25,307)	663	1,350	(180,703)	(173,721)	(160,037)	(6,982)	(20,666)
Principal Payments	(46,441)	(45,485)	(45,485)	(956)	(956)	(92,788)	(91,832)	(90,881)	(956)	(1,907)	(550,392)	(562,081)	(549,370)	11,689	(1,022)
Net Cash Provided by (Used in) Financing Activities	(58,217)	(57,924)	(57,924)	(293)	(293)	(116,745)	(116,452)	(116,187)	(293)	(558)	(731,095)	(735,802)	(709,407)	4,707	(21,688)
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	(26,596)	-	(6,529)	(26,596)	(20,067)	(40,203)	(13,607)	(12,496)	(26,596)	(27,707)	(13,607)	22	(55,198)	(13,630)	41,590
Capital Expenditures, net	(215,413)	(401,818)	(83,607)	186,405	(131,806)	(360,558)	(546,963)	(125,045)	186,405	(235,513)	(3,059,921)	(2,870,000)	(4,010,435)	(189,921)	950,514
Net Cash Provided By (Used In) Capital and Related Activities	(242,009)	(401,818)	(90,136)	159,809	(151,873)	(400,761)	(560,570)	(137,540)	159,810	(263,221)	(3,073,528)	(2,869,978)	(4,065,632)	(203,551)	992,104
Cash Flows From Investing Activities															
Investments Converting To Cash	942,000	942,000	-	-	942,000	1,677,000	1,677,000	743,000	-	934,000	1,677,000	-	2,851,000	1,677,000	(1,174,000)
Purchased Investments	-	-	-	-	-	(735,000)	(735,000)	(1,486,000)	-	751,000	(1,677,000)	-	(3,714,000)	(1,677,000)	2,037,000
Interest Income	3,484	4,000	8,937	(516)	(5,454)	8,120	8,637	18,953	(516)	(10,832)	48,637	87,943	81,664	(39,306)	(33,027)
Net Cash Provided By (Used In) Investing Activities	945,484	946,000	8,937	(516)	936,546	950,120	950,637	(724,047)	(516)	1,674,168	48,637	87,943	(781,336)	(39,306)	829,973
FUND NET CASH FLOWS	555,862	357,685	974,727	198,178	(418,865)	2,127,322	1,929,144	77,518	198,178	2,049,804	4,318,098	4,353,353	(1,043,928)	(35,255)	5,362,026
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	1,493,261	1,472,000	1,480,955	21,261	12,306	2,678,718	2,657,457	2,798,875	21,261	(120,158)	20,192,457	20,282,051	16,094,968	(89,594)	4,097,489
Operating Expenses (Cash Based)	(864,433)	(911,117)	(855,989)	46,684	(8,444)	(1,753,962)	(1,800,646)	(1,682,545)	46,684	(71,417)	(13,322,765)	(13,288,362)	(12,421,728)	(34,403)	(901,037)
Interest Income	3,484	4,000	8,937	(516)	(5,454)	8,120	8,637	18,953	(516)	(10,832)	48,637	87,943	81,664	(39,306)	(33,027)
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	29,825	85,187	77,890	(55,362)	(48,065)	190,550	245,912	187,832	(55,362)	2,718	920,941	877,523	1,045,823	43,418	(124,882)
Cash Available For Debt Service	662,137	650,071	711,793	12,066	(49,656)	1,123,426	1,111,360	1,323,115	12,066	(199,688)	7,839,270	7,959,156	4,800,728	(119,885)	3,038,543
Interest Paid	15,059	15,059	13,336	-	1,722	30,117	30,117	26,673	-	3,444	180,703	173,721	160,037	6,982	20,666
Debt Retirement (Principal Payments)	45,866	45,866	45,781	-	85	91,732	91,732	91,562	-	170	550,392	562,081	549,370	(11,689)	1,022
Total Debt Service	60,925	60,925	59,117	-	1,807	121,849	121,849	118,234	-	3,615	731,095	735,802	709,407	(4,707)	21,688
Debt Service Ratio	10.87	10.67	12.04	0.20	(1.17)	9.22	9.12	11.19	0.10	(1.97)	10.72	10.82	6.77	(0.09)	3.96

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES

Operating Revenues:

User Charges
Connection & System Charges
Other Miscellaneous Revenues

Total Operating Revenues

Operating Expenses:

Personnel
Shared Services - General & Administrative
Utilities
Materials and Supplies
Miscellaneous Services
Treatment and Transportation
Depreciation and Amortization
Major Maintenance Expenses
Other Miscellaneous

Total Operating Expenses

Net Operating Profit

Non-Operating Income (Expense)

Interest Income
Interest (Expense)
Other Miscellaneous

Net Non-Operating Income (Expense)

Net Income (Loss)

CASH FLOW STATEMENT

Cash Flows From Operating Activities

Operating Revenues
Operating Expenses (ex D&A)
Non-Cash Working Capital Changes

Net Cash Provided by (Used in) Operating Activities

Cash Flows From Financing Activities

Capital Contributions
Proceeds New Borrowing
Interest Payments
Principal Payments

Net Cash Provided by (Used in) Financing Activities

Cash Flows from Capital and Related Activities

Non-Operating Income (Expenses)
Capital Expenditures, net

Net Cash Provided By (Used In) Capital and Related Activities

Cash Flows From Investing Activities

Investments Converting To Cash
Purchased Investments
Interest Income

Net Cash Provided By (Used In) Investing Activities

FUND NET CASH FLOWS

Suburban - Wastewater				
Actual	Q1 FC	FC Var	Comments	
1,493,261	1,472,000	21,261	Higher residential and commercial revenues partly offset by lower hauler revenues Lower tapping fees	
56,391	85,187	(28,796)		
30	-	30		
1,549,682	1,557,187	(7,505)	Unfavorable variance on tapping fees partially offset by higher user charges	
88,296	130,935	42,639		
17,783	19,000	1,217		
25,464	37,000	11,536		
30,825	37,000	6,175		
469,883	455,000	(14,883)		
230,000	230,000	-		
514,641	481,000	(33,641)		
2,182	2,182	0		
-	-	-		
1,379,074	1,392,117	13,043	Lower personnel costs and utilities partially offset by higher services spending and higher depreciation	
170,608	165,071	5,537	Lower operating expenses to offset lower operating revenues	
3,484	4,000	(516)		
(15,207)	(15,000)	(207)		
(26,596)	-	(26,596)		
(38,319)	(11,000)	(27,319)	Lower investment income	
			Slightly favorable variance on net operating income more than offset by unfavorable variance on investment income	
132,289	154,071	(21,782)		
1,549,682	1,557,187	(7,505)		
(864,433)	(911,117)	46,684		
(774,644)	(774,644)	(0)		
(89,395)	(128,573)	39,178	Lower operating expenses	
-	-	-		
-	-	-		
(11,776)	(12,439)	663		
(46,441)	(45,485)	(956)		
(58,217)	(57,924)	(293)		
(26,596)	-	(26,596)		
(215,413)	(401,818)	186,405		
(242,009)	(401,818)	159,809		
Lower investment income more than offset by lower capex				
942,000	942,000	-		
-	-	-		
3,484	4,000	(516)		
945,484	946,000	(516)		
555,862	357,685	198,178	Higher cash from operations and lower capex	

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - CITY DIVISION
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES	City Division														
	Month					Year To Date					Full Year				
	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Actual	Q1 FC	Prior Yr	FC Var	PY Var	Q1 FC	Budget	Prior Yr	Bud Var	PY Var
Operating Revenues:															
User Charges	4,278,571	4,201,000	3,309,376	77,571	969,195	7,820,555	7,742,984	6,532,073	77,571	1,288,481	46,460,984	46,388,630	42,447,152	72,354	4,013,832
Connection & System Charges	316,575	374,004	463,136	(57,430)	(146,561)	454,450	511,880	599,853	(57,430)	(145,403)	4,251,925	4,488,054	3,511,291	(236,129)	740,634
Other Miscellaneous Revenues	3,180	2,000	3,390	1,180	(210)	7,470	6,290	7,980	1,180	(510)	69,290	67,475	113,357	1,815	(44,067)
Total Operating Revenues	4,598,326	4,577,004	3,775,902	21,321	822,424	8,282,475	8,261,154	7,139,907	21,321	1,142,568	50,782,199	50,944,159	46,071,800	(161,960)	4,710,398
Operating Expenses:															
Personnel	458,859	490,620	769,496	31,762	310,638	1,449,970	1,481,731	1,549,216	31,762	99,246	12,702,947	12,623,714	10,681,433	(79,233)	(2,021,513)
Shared Services - General & Administrative	107,978	157,000	127,888	49,022	19,910	229,896	278,918	192,745	49,022	(37,151)	1,915,918	1,872,369	1,529,986	(43,549)	(385,931)
Utilities	126,279	220,000	183,999	93,721	57,720	285,250	378,971	369,353	93,721	84,102	1,975,971	2,037,742	1,705,824	61,771	(270,148)
Materials and Supplies	182,382	158,000	100,914	(24,382)	(81,468)	226,686	202,304	113,020	(24,382)	(113,666)	2,349,304	2,334,092	1,486,676	(15,212)	(862,627)
Miscellaneous Services	140,348	145,000	125,134	4,652	(15,214)	160,495	165,147	135,576	4,652	(24,919)	2,063,147	2,184,774	1,513,870	121,627	(549,278)
Treatment and Transportation	-	-	-	-	-	-	-	-	-	-	13,000	13,800	12,480	800	(520)
Depreciation and Amortization	521,492	509,000	491,154	(12,492)	(30,338)	1,043,067	1,030,575	982,308	(12,492)	(60,759)	6,195,575	6,178,570	5,966,917	(17,005)	(228,659)
Major Maintenance Expenses	48,718	48,718	7,930	(0)	(40,789)	51,739	51,739	12,788	(0)	(38,951)	4,206,200	4,206,200	2,763,527	0	(1,442,673)
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	7,540	-	7,540
Total Operating Expenses	1,586,056	1,728,338	1,806,514	142,282	220,459	3,447,104	3,589,386	3,355,006	142,282	(92,097)	31,422,062	31,451,261	25,668,253	29,199	(5,753,809)
Net Operating Profit	3,012,270	2,848,666	1,969,387	163,603	1,042,882	4,835,372	4,671,768	3,784,900	163,603	1,050,471	19,360,137	19,492,897	20,403,547	(132,760)	(1,043,410)
Non-Operating Income (Expense)															
Interest Income	691	17,000	518	(16,309)	173	559	16,868	1,082	(16,309)	(523)	156,868	176,419	5,374	(19,551)	151,495
Interest (Expense)	(1,394,435)	(1,463,000)	(1,382,735)	68,565	(11,700)	(2,788,873)	(2,857,438)	(2,765,470)	68,565	(23,403)	(17,401,438)	(17,474,997)	(16,511,565)	73,559	(889,873)
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Non-Operating Income (Expense)	(1,393,744)	(1,446,000)	(1,382,217)	52,256	(11,527)	(2,788,314)	(2,840,570)	(2,764,388)	52,256	(23,926)	(17,244,570)	(17,298,578)	(16,506,191)	54,008	(738,379)
Net Income (Loss)	1,618,526	1,402,666	587,170	215,860	1,031,356	2,047,058	1,831,199	1,020,513	215,860	1,026,545	2,115,567	2,194,319	3,897,356	(78,752)	(1,781,789)
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	4,598,326	4,577,004	3,775,902	21,321	822,424	8,282,475	8,261,154	7,139,907	21,321	1,142,568	50,782,199	50,944,159	46,071,800	(161,960)	4,710,398
Operating Expenses (ex D&A)	(1,064,564)	(1,219,338)	(1,315,360)	154,774	250,797	(2,404,036)	(2,558,810)	(2,372,698)	154,774	(31,338)	(25,226,487)	(25,272,691)	(19,701,337)	46,205	(5,525,150)
Non-Cash Working Capital Changes	(1,062,995)	(1,062,995)	(513,247)	0	(549,748)	(5,196,003)	(5,196,003)	(975,933)	0	(4,220,070)	2,003,997	2,197,478	2,903,359	(193,481)	(899,363)
Net Cash Provided by (Used in) Operating Activities	2,470,767	2,294,671	1,947,294	176,096	523,473	682,436	506,340	3,791,276	176,096	(3,108,840)	27,559,709	27,868,945	29,273,823	(309,236)	(1,714,114)
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	1,200,000	1,200,000	-	-	1,200,000
Interest Payments	-	-	-	-	-	-	-	-	-	-	(12,799,531)	(12,799,531)	(11,600,444)	-	(1,199,087)
Principal Payments	-	-	-	-	-	-	-	-	-	-	(2,660,831)	(2,660,831)	(2,514,642)	-	(146,189)
Net Cash Provided by (Used in) Financing Activities	-	-	-	-	-	-	-	-	-	-	(14,260,362)	(14,260,362)	(14,115,086)	-	(145,276)
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	-	-	-	-	-	-	-	-	-	-	(1,286,650)	(1,286,650)	(1,243,524)	-	(43,126)
Capital Expenditures, net	(423,374)	(220,698)	(322,708)	(202,676)	(100,666)	(507,631)	(304,955)	(413,119)	(202,676)	(94,512)	(6,661,300)	(7,058,800)	(4,825,663)	397,500	(1,835,637)
Net Cash Provided By (Used In) Capital and Related Activities	(423,374)	(220,698)	(322,708)	(202,676)	(100,666)	(507,631)	(304,955)	(413,119)	(202,676)	(94,512)	(7,947,950)	(8,345,450)	(6,069,187)	397,500	(1,878,763)
Cash Flows From Investing Activities															
Investments Converting To Cash	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchased Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	691	17,000	518	(16,309)	173	559	16,868	1,082	(16,309)	(523)	156,868	176,419	5,374	(19,551)	151,495
Net Cash Provided By (Used In) Investing Activities	691	17,000	518	(16,309)	173	559	16,868	1,082	(16,309)	(523)	156,868	176,419	5,374	(19,551)	151,495
FUND NET CASH FLOWS	2,048,084	2,090,974	1,625,104	(42,890)	422,980	175,364	218,254	3,379,239	(42,890)	(3,203,875)	5,508,265	5,439,552	9,094,924	68,713	(3,586,659)
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	4,278,571	4,201,000	3,309,376	77,571	969,195	7,820,555	7,742,984	6,532,073	77,571	1,288,481	46,460,984	46,388,630	42,447,152	72,354	4,013,832
Operating Expenses (Cash Based)	(1,064,564)	(1,219,338)	(1,315,360)	154,774	250,797	(2,404,036)	(2,558,810)	(2,372,698)	154,774	(31,338)	(25,226,487)	(25,272,691)	(19,701,337)	46,205	(5,525,150)
Interest Income	691	17,000	518	(16,309)	173	559	16,868	1,082	(16,309)	(523)	156,868	176,419	5,374	(19,551)	151,495
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	319,755	376,004	466,526	(56,250)	(146,771)	461,920	518,170	607,833	(56,250)	(145,913)	4,321,215	4,555,529	3,624,648	(234,314)	696,567
Cash Available For Debt Service	3,534,453	3,374,666	2,461,059	159,786	1,073,394	5,878,998	5,719,212	4,768,291	159,786	1,110,708	25,712,580	25,847,886	26,375,837	(135,306)	(663,257)
Interest Paid	1,066,628	1,066,628	966,704	-	99,924	2,133,255	2,133,255	1,933,407	-	199,848	12,799,531	12,799,531	11,600,444	-	1,199,087
Debt Retirement (Principal Payments)	221,736	221,736	209,554	-	12,182	443,472	443,472	419,107	-	24,365	2,660,831	2,660,831	2,514,642	-	146,189
Total Debt Service	1,288,364	1,288,364	1,176,257	-	112,106	2,576,727	2,576,727	2,352,514	-	224,213	15,460,362	15,460,362	14,115,086	-	1,345,276
Debt Service Ratio	2.74	2.62	2.09	0.12	0.65	2.28	2.22	2.03	0.06	0.25	1.66	1.67	1.87	(0.01)	(0.21)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended February 28, 2022

STATEMENTS OF ACTIVITIES

Operating Revenues:

User Charges
Connection & System Charges
Other Miscellaneous Revenues

Total Operating Revenues

Operating Expenses:

Personnel
Shared Services - General & Administrative
Utilities
Materials and Supplies
Miscellaneous Services
Treatment and Transportation
Depreciation and Amortization
Major Maintenance Expenses
Other Miscellaneous

Total Operating Expenses

Net Operating Profit

Non-Operating Income (Expense)

Interest Income
Interest (Expense)
Other Miscellaneous

Net Non-Operating Income (Expense)

Net Income (Loss)

CASH FLOW STATEMENT

Cash Flows From Operating Activities

Operating Revenues
Operating Expenses (ex D&A)
Non-Cash Working Capital Changes

Net Cash Provided by (Used in) Operating Activities

Cash Flows From Financing Activities

Capital Contributions
Proceeds New Borrowing
Interest Payments
Principal Payments

Net Cash Provided by (Used in) Financing Activities

Cash Flows from Capital and Related Activities

Non-Operating Income (Expenses)
Capital Expenditures, net

Net Cash Provided By (Used In) Capital and Related Activities

Cash Flows From Investing Activities

Investments Converting To Cash
Purchased Investments
Interest Income

Net Cash Provided By (Used In) Investing Activities

FUND NET CASH FLOWS

City Division				
Actual	Q1 FC	FC Var	Comments	
4,278,571	4,201,000	77,571		
316,575	374,004	(57,430)		
3,180	2,000	1,180		
4,598,326	4,577,004	21,321	Higher user charges offset partly by lower reimbursement revenues	
458,859	490,620	31,762		
107,978	157,000	49,022		
126,279	220,000	93,721		
182,382	158,000	(24,382)		
140,348	145,000	4,652		
-	-	-		
521,492	509,000	(12,492)		
48,718	48,718	(0)		
-	-	-		
1,586,056	1,728,338	142,282	Lower personnel, G&A, and utilities with a small offset from higher supplies	
3,012,270	2,848,666	163,603	Higher operating revenues and lower operating expenses	
691	17,000	(16,309)		
(1,394,435)	(1,463,000)	68,565		
-	-	-		
(1,393,744)	(1,446,000)	52,256	Lower interest expense	
1,618,526	1,402,666	215,860	Higher net operating income along with lower interest expense	
4,598,326	4,577,004	21,321		
(1,064,564)	(1,219,338)	154,774		
(1,062,995)	(1,062,995)	0		
2,470,767	2,294,671	176,096	Lower operating expenses along with higher operating revenues	
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
-	-	-		
(423,374)	(220,698)	(202,676)		
(423,374)	(220,698)	(202,676)	Higher capex	
-	-	-		
-	-	-		
691	17,000	(16,309)		
691	17,000	(16,309)		
2,048,084	2,090,974	(42,890)	Higher capex more than offset higher cash from operations	

LEHIGH COUNTY AUTHORITY
CASH & INVESTMENT SUMMARY
For the Period Ended February 28, 2022

	Suburban Water				Suburban Wastewater				City Division				Total			
	2/28/2022 Actual	2022 Forecast	2022 Budget	2021 Actual	2/28/2022 Actual	2022 Forecast	2022 Budget	2021 Actual	2/28/2022 Actual	2022 Forecast	2022 Budget	2021 Actual	2/28/2022 Actual	2022 Forecast	2022 Budget	2021 Actual
Cash																
Operating																
Unrestricted	4,453,456	4,870,401	4,277,520	4,359,102	1,365,495	3,556,276	8,147,829	455,535	7,425,927	4,287,780	14,389,739	6,779,585	12,572,759	12,714,457	26,815,088	11,594,223
Restricted	-	-	-	-	-	-	-	-	14,637,526	25,794,847	18,916,191	25,794,847	14,637,526	25,794,847	18,916,191	25,794,847
Total Operating	4,453,456	4,870,401	4,277,520	4,359,102	1,365,495	3,556,276	8,147,829	455,535	22,063,453	30,082,627	33,305,930	32,574,433	27,210,285	38,509,304	45,731,279	37,389,070
Capital																
Unrestricted	319,723	319,723	2,042,457	319,718	7,172,742	7,172,742	7,672,019	5,955,385	11,022,670	11,022,670	169,980	3,022,601	18,515,135	18,515,135	9,884,456	9,297,704
Restricted	-	-	-	-	338,366	338,366	338,204	338,360	7,500,036	7,500,036	7,500,000	7,500,035	7,838,401	7,838,401	7,838,204	7,838,396
Total Capital	319,723	319,723	2,042,457	319,718	7,511,107	7,511,107	8,010,223	6,293,745	18,522,706	18,522,706	7,669,980	10,522,636	26,353,536	26,353,536	17,722,660	17,136,099
Other Restricted																
Debt Reserves	1,648,587	1,648,569	1,858,493	1,648,569	-	-	-	-	30,179,669	27,493,396	28,976,677	27,493,396	31,828,256	29,141,965	30,835,170	29,141,965
Escrow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Restricted	1,648,587	1,648,569	1,858,493	1,648,569	-	-	-	-	30,179,669	27,493,396	28,976,677	27,493,396	31,828,256	29,141,965	30,835,170	29,141,965
Total Cash	6,421,765	6,838,693	8,178,470	6,327,389	8,876,602	11,067,383	16,158,052	6,749,280	70,765,828	76,098,729	69,952,587	70,590,465	85,392,077	94,004,805	94,289,109	83,667,134
Investments																
Operating																
Unrestricted	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-
Capital																
Unrestricted	2,966,073	2,575,123	2,497,825	2,975,123	5,995,344	6,977,548	6,977,548	6,977,548	-	-	-	-	8,961,417	9,552,671	9,475,373	9,952,671
Restricted	-	-	-	-	338,366	338,366	338,204	338,360	-	-	-	-	-	-	-	-
Total Capital	2,966,073	2,575,123	2,497,825	2,975,123	5,995,344	6,977,548	6,977,548	6,977,548	-	-	-	-	8,961,417	9,552,671	9,475,373	9,952,671
Other Restricted																
Debt Reserves	-	-	244,924	-	-	-	-	-	-	-	-	-	-	-	244,924	-
Escrow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Restricted	-	-	244,924	-	-	-	-	-	-	-	-	-	-	-	244,924	-
Total Investments	2,966,073	2,575,123	2,742,749	2,975,123	5,995,344	6,977,548	6,977,548	6,977,548	-	-	-	-	8,961,417	9,552,671	9,720,297	9,952,671
Total Cash and Investments	9,387,838	9,413,816	10,921,219	9,302,512	14,871,946	18,044,931	23,135,600	13,726,828	70,765,828	76,098,729	69,952,587	70,590,465	94,353,494	103,557,476	104,009,406	93,619,805
Summary																
Cash																
Unrestricted	4,773,178	5,190,124	6,319,977	4,678,820	8,538,236	10,729,017	15,819,848	6,410,920	18,448,597	15,310,450	14,559,719	9,802,186	31,087,894	31,229,591	36,699,544	20,891,926
Restricted	1,648,587	1,648,569	1,858,493	1,648,569	338,366	338,366	338,204	338,360	52,317,230	60,788,279	55,392,868	60,788,279	54,304,183	62,775,214	57,589,565	62,775,208
Total Cash	6,421,765	6,838,693	8,178,470	6,327,389	8,876,602	11,067,383	16,158,052	6,749,280	70,765,828	76,098,729	69,952,587	70,590,465	85,392,077	94,004,805	94,289,109	83,667,134
Investments																
Unrestricted	2,966,073	2,575,123	2,497,825	2,975,123	5,995,344	6,977,548	6,977,548	6,977,548	-	-	-	-	8,961,417	9,552,671	9,475,373	9,952,671
Restricted	-	-	244,924	-	-	-	-	-	-	-	-	-	-	-	244,924	-
Total Investments	2,966,073	2,575,123	2,742,749	2,975,123	5,995,344	6,977,548	6,977,548	6,977,548	-	-	-	-	8,961,417	9,552,671	9,720,297	9,952,671
Total Cash and Investments	9,387,838	9,413,816	10,921,219	9,302,512	14,871,946	18,044,931	23,135,600	13,726,828	70,765,828	76,098,729	69,952,587	70,590,465	94,353,494	103,557,476	104,009,406	93,619,805

CERTIFICATES OF DEPOSIT

February 2022

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
Cons Wtr (2)	California First National Bank	Irvine, CA	249,000.00	2/23/22	2/23/24	1.200

DEVELOPMENT ACTIVITY

Water system construction is occurring in the following developments:

5420 Crackersport Road, 1 commercial lot, UMT
8323/8449 Congdon Hill Drive, 2 industrial lots with warehouses, LMT
Fields at Indian Creek, Phases 4 & 5, 86 residential units (sfd), water and sewer, UMiLT & Emmaus
Kohler Tract, 123 residential lots (sfa), water and sewer, UMiLT
Lehigh Hills, Lot 5 Phase 2, 240 residential units (sfd.), UMT
Lehigh Hills Townhouses, 24 townhouse units (sfa), UMT
Mountain View Estates, 27 residential units (sfd), LMT
Sauerkraut Lane Extension, Roadway & water line extension, LMT
West Hills Business Center Lot H, 1 commercial lot, Weisenburg T

Water system plans are being reviewed for the following developments:

749 Route 100, 1 industrial lot with warehouse, UMT
3369 Rt 100 Neighborhood Hospital & Medical Offices, 1 commercial lot, LMT
5329-5347-5357 Hamilton Blvd., 1 commercial lot, LMT
ABE Doors & Windows Redevelopment, 1 commercial lot, LMT
Advanced Health Care of Allentown, 1 commercial lot, LMT
ATAS International, 1 industrial lot, UMT
Carriage East Residential Development, 11 residential units, (sfd), UMT
Fields at Brookside, water main relocation, LMT
Estates at Maple Ridge, 30 residential units (sfd), UMiLT
Fallbrooke Residential Subdivision, 90 sf residential units, UMT
Green Hills Commerce Center III, 1 commercial lot, UMT
Guardian Self-Storage, 1 commercial lot, LMT
Laurel Field, Phase 5, 25 townhouses, UMT
Madison Village at Penn's View, 66 manufactured homes, 1 lot, water and sewer, LynnT
Mertztown Residential Subdivision, 264 sf units & 136 townhouse units, LMT
Mosser Road Subdivision, 10 sf units, UMT
Parkland Crossing (formerly 1224 Weilers Rd Twins), 144 townhouse units, UMT
Ridings at Parkland, Phase 2, 38 residential units (sfd), NWT
Self-Storage Facility, Cedarbrook Road – 1 Commercial Lot, LMT
Schoeneck Road, Lot 1, 1 lot, warehouse, LMT
Sheetz, Cetronia Road, 1 commercial lot, UMT
Spring Creek Properties, Lot 12, 1 lot, warehouse, LMT
The Annex at Fields at Indian Creek, 22 S.F. residential units, Emmaus Borough
Towneplace Suites by Marriott, 91-room hotel, UMT
Towns At Schaefer Run, 128 townhouse unit (sfd), UMT

Sewage Facilities Planning Modules Reviewed in Prior Month:

1014 Sumner Ave. Development, Allentown, 420 gpd.
Tacoma Street Subdivision, Allentown, 714 gpd.
Zayat Subdivision, Allentown, 223 gpd.
Swans Apartment Project, Allentown, 18,778 gpd.

Presented: March 28, 2022

Critical Activities	System	Description	Feb-22	2022 Totals	2021 Totals	Permit
			Daily Avg (MGD)	Daily Avg (MGD)	Daily Avg (MGD)	Daily Max (MGD)
Water Production	Allentown	Total	21.53	21.66	22.00	39.0
		Schantz Spring	6.57	6.53	7.29	9.0
		Crystal Spring	3.85	3.84	3.75	4.0
		Little Lehigh Creek	11.03	11.22	10.84	30.0
		Lehigh River	0.07	0.05	0.11	28.0
	Central Lehigh	Total	9.68	9.97	10.98	19.04 MGD Avg
		Feed from Allentown	6.24	6.75	7.29	7.0 MGD Avg 10.5 MGD Max
		Well Production (CLD)	3.44	3.23	3.69	8.54 MGD Avg
		Sum of all (12) other Suburban Water Systems	0.11	0.12	0.13	1.71 Sum of all wells
Wastewater Treatment		Kline's Island	33.80	31.54	32.27	40.0
		Pretreatment Plant	4.92	4.67	5.17	5.75 (design capacity)
		Sum of all (5) other Suburban WW Systems	0.19	0.18	0.21	0.36
			Feb-22	2022 Totals	2021 Totals	2020 Totals
Precipitation Totals (inches)			3.98	6.4	44.67	60.66
Compliance Reports Submitted to Allentown			20	48	280	278
Notices of Violation (NOVs)		(Allentown + Suburban)	0	0	3	1
Sanitary Sewer Overflows (SSOs)/Bypasses		(Allentown + Suburban)	3	4	26	37
Main Breaks Repaired		Allentown	2	10	20	20
		Suburban	0	1	14	12
Customer Service Phone Inquiries		(Allentown + Suburban)	821	1,792	15,857	22,992
Water Shutoffs for Non-Payment		(Allentown + Suburban)	169	272	1,773	1,956
Injury Accidents		(Allentown + Suburban)	0	1	8	10
Emergency Declarations		Allentown	0	1 @ \$213,593	0	(2)@ \$152,053
		Suburban	0	0	(1) @ \$48,000	(1) @ \$19,335
Significant Repairs/Upgrades:						
Description of NOVs and/or SSOs: There were two (2) SSOs and one (1) bypass in February 2022. The bypass occurred at Heidelberg Heights WWTP on February 2, 2022 which resulted from a storm producing 1.65" of rain. One SSO occurred on Dauphin Street in Allentown due to a blockage caused by a build up of rags. An SSO of 12,000 gallons occurred at the LCA Pretreatment due to a power failure at the waste receiving station.						
Other Highlights: The attached memo details the changes made to the Pretreatment Plant hauler program. Jason Gruber to discuss Huck Line soil sample results.						

Quick Reference Timeline 36-inch ductile iron line (Huckleberry Line)

February 17, 2020

Water surfacing in the 200 block of N 17th Street. Small Hairline crack on 36-inch line at the bell. Line had to be isolated and shut down to repair.

April 29, 2020

Major failure (section of pipe blew out in the 100 block of South 17th Street.)

May 22, 2020

Pipe sections from both breaks were sent out for analysis. United States Pipe and Foundry Company, Alabama Works- Bessemer plant completed the investigation. In short, both pipe sections exhibited areas of corrosion and concern.

December 14, December 15, 2020

Pure Technologies conducted an electromagnetic inspection of the pipe. The project consisted of survey of all the 1983 Ductile iron pipe that was installed. (17th street from Union to Chew and Chew Street from 17th to 22nd street)

August 2021

Pure Technologies provided findings. 7 anomalies across 7 pipe sections of the 328 sections surveyed indicated wall loss.

October 2021

Excavated and removed three of the sections of pipe that were found in the report to have anomalies. Unable to find the anomalies indicated in the pipe. At the time of excavation crews grabbed soil samples.

November 2021

Soil samples sent out from the two excavation sites indicated moderately to appreciably corrosive soil.

Decision was made to collect additional soil samples to obtain a more accurate findings across the pipeline segment on 17th from Union to Chew.

December 2021

LCA crews excavate 5 different sites and collected soil from above the pipeline. Samples were sent in to Engineering Design Technologies, Inc

February 2022

Finding and report from E.D.T concluded soil samples overall are moderately corrosive. Coupon pipe was also sent in for analysis that showed about 11 percent wall loss.

March 2022

To review the possibility and or the elimination that stray current is a contribution factor to the break locations. (Effects of speeding up corrosion on the iron pipe).

(Based upon the inspections and work completed to date, it is evident that the pipe has some external attacks from corrosion issues related to the soil and environment it lays in. We didn't find from the robotic condition assessment any wall loss anomalies that were called out. Overall, the inside pipe condition was observed as ok.

Crews have already installed pressure sensors that collect, report, and document pressure readings 24 hours a day, 7 days a week. We also plan of installing permanent leak sensors on the line as an extra precaution in the fall of this year 2022)



1053 SPRUCE ROAD * P.O. BOX 3348 * ALLENTOWN, PA 18106-0348
610-398-2503 * FAX 610-398-8413 * www.lehighcountyauthority.org
email: service@lehighcountyauthority.org

MEMORANDUM

TO: LCA Board of Directors
FROM: Andrew Moore, Director of Plant Operations
DATE: March 28, 2022
RE: Updates to the LCA Pretreatment Plant Hauled Waste Program

In response to the discovery of 1,4 dioxane being present in the discharge of Kline's Island Wastewater Treatment Plant (KIWWTP), additional measures are being taken to stay ahead of regulatory changes. Implementation will further protect the Lehigh County Authority (LCA) Pretreatment Plant, KIWWTP, and receiving streams from harmful industrial discharges. This memo is provided to update the LCA Board of Directors on the program updates being undertaken by LCA staff to provide increased environmental protection and reduce the risks associated with the acceptance of hauled waste at the Pretreatment Plant (PTP).

Changes to the Application Process for Hauled Waste

The PTP Hauled Waste Program was most recently updated in 2018 to align the hauler permitting process with LCA's industrial waste program run from the KIWWTP. The program requires all haulers and waste streams to be permitted and monitored at discrete times throughout the year. LCA's industrial waste program includes monitoring for 130 regulated contaminants in accordance with EPA requirements.

Expanding monitoring that LCA requires for hauler program applicants, as outlined below, will help capture unregulated pollutants of concern. These changes will only be applicable to wastes that are associated with industrial activities and will not include septic, treatment plant sludges, or wastes associated with food processing.

1. Increase monitoring to match NPDES application requirements

As part of the application process, new wastes associated with industrial activities will be required to complete additional testing which goes beyond the EPA Pretreatment requirements described above. Moving forward, the selected analytes will be based on the PA DEP's Toxic Management Spreadsheet, which is used in the determination of NPDES (National Pollutant Discharge Elimination System) permit monitoring. These required analytes are occasionally updated and will be monitored for future additions. While this change will result in expanding the list of monitoring requirements by approximately 50 compounds, multiple organic compounds are detected using laboratory methods previously required. This will reduce the cost impact of the updated application process.

2. Requirement to disclose the five highest quantifiable compounds identified

Laboratory methods approved by EPA (specifically methods 624 and 625), have been designed to detect a vast array of compounds, even if they are not required to be reported through the application procedure. Unless specifically requested, these detected compounds are typically not reported. Moving forward, the updated application will require that the five highest quantifiable compounds must be disclosed, whether the compound is specifically requested in the application or not. This approach will make LCA aware of potential contaminants being introduced to the system and will allow us to approach future regulations proactively.

3. Reporting on other pollutants expected to be present in the hauled waste

For various reasons, contaminants are not always detected through the prescribed analytical methods or specified in the application. To capture additional information on the hauled waste to be brought to LCA's system, applicants will also be required to disclose any pollutant that was not revealed on a laboratory report when it is reasonably expected to be present.

These changes will make LCA more aware of any unregulated contaminants present in industrial discharges. While establishing limitations for these contaminants will be contingent upon the establishment of federal or state regulations, it will make the selection of wastes more stringent and position LCA to make proactive decisions about the wastes accepted at the PTP based of proposed and future regulations.