



LEHIGH COUNTY AUTHORITY

LCA Main Office:
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Agendas & Minutes Posted:
www.lehighcountyauthority.org

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BOARD MEETING AGENDA – March 8, 2021 – 12:00 p.m.

Notice of COVID-19 Pandemic Meeting Format: Effective March 23, 2020 and until further notice, meetings of the LCA Board of Directors will be held virtually using the Zoom Meetings application, to avoid risk of infection during the national COVID-19 pandemic emergency. Public participation is welcomed via Zoom, and 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.

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

3. Approval of Minutes

- *February 22, 2021 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *2022-2026 Capital Plan - Allentown Division (Presentation & Discussion) (digital Board packet, page 8-62)*

WATER

WASTEWATER

6. Monthly Project Updates / Information Items (1st Board meeting per month) – **March 2021 report attached** (digital Board packet, page 63-74)

7. Monthly Financial Review (2nd Board meeting per month) – **January 2021 report attached** (digital Board packet, page 75-84)

8. Monthly System Operations Overview (2nd Board meeting per month)

9. Staff Comments

10. Solicitor's Comments

11. Public Comments / Other Comments

12. Executive Sessions

13. Adjournment

UPCOMING BOARD MEETINGS		
March 22, 2021	April 12, 2021	April 26, 2021

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

February 22, 2021

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:01 p.m. on Monday, February 22, 2021, Chairman Brian Nagle presiding. The meeting was held via video and audio advanced communication technology ("ACT"), using the Zoom internet application including telephone option, due to the COVID-19 pandemic emergency. 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 via ACT, using the Zoom internet application including telephone option. A Roll Call of Board members present was taken. Chairman Brian Nagle, Richard Bohner, Norma Cusick, Ted Lyons, Kevin Baker, Linda Rosenfeld, Jeff Morgan, and Amir Famili were present for the duration of the meeting. Scott Bieber joined the meeting at 12:13 p.m.

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

Chairman Nagle stated that the Board received their electronic copy of the Board packet in advance and asked if anyone did not receive their hard copy of the packet. Linda Rosenfeld and Richard Bohner did not receive a hard copy; however, Ms. Rosenfeld picked up a copy at the office.

REVIEW OF AGENDA

Liesel Gross stated that the agenda now shows page numbers for each attachment so those viewing the paperwork electronically can find items easily. There will also be some brief comments provided under the Staff Comments section of the agenda regarding the widespread water service outages in the state of Texas.

APPROVAL OF MINUTES

February 8, 2021 Meeting Minutes

Richard Bohner noted a grammatical error. On a motion by Richard Bohner, seconded by Linda Rosenfeld, the Board approved the minutes of the February 8, 2021 Board meeting as corrected (8-0).

PUBLIC COMMENTS

None.

ACTION AND DISCUSSION ITEMS

Board of Directors – Nomination of Officers

Norma Cusick, serving as the Nominating Committee, indicated she had polled the Board members to determine their interest in serving as a Board officer. She then offered the following slate of nominations for 2021 officers:

Brian C. Nagle, Chair
Scott Bieber, Vice Chair
Richard H. Bohner, Secretary

Norma A. Cusick, Assistant Secretary
Ted Lyons, Treasurer

Ms. Cusick asked if there were any other nominations, which there were not. On a motion by Norma Cusick, seconded by Linda Rosenfeld, the Board elected the officers for 2021 as nominated (8-0).

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

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

Resolution No. 02-2021-01 – Destruction of Authority Documents

Liesel Gross explained that Resolution No. 02-2021-01 is required for disposition of certain Authority records. This is in accordance with the previously approved Resolution No. 11-2019-1, which authorized Authority staff to follow the Municipal Records Manual Retention and Disposition Schedule for Records of Pennsylvania Municipal Governments. Chris Moughan noted the Authority has a small list of paper records for destruction according to the schedule of records requirements and that the records will be destroyed by a third-party service that works with sensitive and confidential documents. The Authority plans on a larger volume of documents that will include both digital and paper records in the third quarter of 2021. Ms. Gross commented that this will become standard practice. Solicitor Mike Gaul said the Authority is following the proper guidelines by adopting a resolution and listing the documents for destruction.

On a motion by Linda Rosenfeld, seconded by Norma Cusick, the Board approved Resolution 02-2021-01 (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

Chairman Nagle asked Chris Moughan to provide guidance to the Board regarding proper handling of documents and correspondence provided to the Board. Mr. Moughan stated he will prepare the requested guidelines for submission to the Board.

2022-2026 Capital Plan – Suburban Division and Administration

Liesel Gross explained the Authority's capital planning and approval process, noting that the five-year capital plan is a conceptual proposal for the work to be completed in the years ahead, and

approval by the Board does not indicate approval of any specific project or funding commitment. She explained the Suburban Division and Administration draft plan would be presented today, followed by the City Division draft plan at the next meeting. A 30-day comment period would follow, with potential Board approval in April.

Chuck Volk reviewed the highlights of the 2022-2026 Administration Capital Plan, noting there are no new projects for this year. The largest project is the SCADA project planned for all the Suburban Division stations. The project will improve communications reliability, programing and hardware, and replace obsolete systems that create an operating risk. The project will also reduce compliance risk and provide for staff training on updated systems.

Mr. Volk then reviewed the 2022-2026 Suburban Division Water Capital Plan. He highlighted the water main replacement program that will start up again in 2022 and showed a map of the system and the priority areas to be addressed in the next five years. Prioritization for main replacements is based on the age and material of the mains and the break frequency. Geological factors are also taken into consideration.

The Suburban Division system improvement projects were reviewed. Ed Klein reviewed the financial analysis for Suburban Division water projects, noting that about \$10 million in borrowing is recommended for system improvements and main replacements in 2022, 2023, and 2024. The remaining projects will be funded by operating revenues or reserves. Mr. Klein also suggested that refinancing the Authority's debt would reduce the rate impact of this plan. Refinancing would save almost \$2.7 million debt service over the course of the loan. Kevin Baker asked if some of the projects generate savings and benefits and if this is factored into the financials. Chuck Volk explained that the individual project detail sheets show the drivers for each project such as regulatory, efficiency or asset management. Kevin Baker suggested the staff quantify the projects, and list them by their drivers and financial enhancements. Liesel Gross explained that some projects are related to making sure capacity is available for growth. Additional revenue from growth is factored into the financial analysis.

Chuck Volk then reviewed the 2022-2026 Suburban Division Wastewater Capital Plan. He highlighted projects related to the Western Lehigh Interceptor / Little Lehigh Relief Interceptor, which are needed to address regional needs for treatment and conveyance capacity and address wet-weather issues. He also reviewed projects related to the satellite systems, most of which are driven by regulatory requirements, and the annual / recurring projects. Ed Klein reviewed the financials, stating that all funding for the Suburban Division wastewater projects will come from operating revenues and reserves. There will not be a need for borrowing. Chairman Nagle asked where the operating reserves come from and how is it built up. Mr. Klein explained that the reserves are built up over time from operating revenues as well as tapping fees paid by new users. Jeff Morgan asked if loaning money between the Suburban Division water and wastewater funds would be an option to reduce the need to issue new bonds for the water projects. Liesel Gross said this has been reviewed in the past and there are controls and restrictions in place within the bond indentures that restrict these options. In addition, the intermunicipal wastewater agreements specify how revenues are generated and how reserves are to be used, which would also limit the opportunity for inter-fund loans or transfers. She said the staff can review this option again.

Liesel Gross concluded the presentation by noting that the Allentown Division plan will be presented at the March 8th meeting.

Kline's Island Sewer System (KISS) – Regional Sewer Capacity & Wet-Weather Planning: 2021 KISS Model Expansion & Calibration and 2022 City of Allentown RDII (Rain Derived Inflow and Infiltration) Analysis

Phil DePoe gave a presentation and update regarding the Kline's Island Sewer System Act 537 Plan. He is asking for approval of the project to expand and calibrate the sewer system hydraulic model and complete the rain derived inflow and infiltration (RDII) characterization of the City of Allentown sewer collection system. Arcadis has been selected to complete this work. The scope of the work is for the expansion of the hydraulic model to capture the City and municipal signatory sewer systems using rainfall and flow data collected during the 2021 monitoring period. The work is expected to start in March 2021 and be completed by June 2022. In June 2022, the model will aid in the identification and evaluation of regional alternatives for providing both treatment and conveyance capacity through the 2050 planning period. Jim Shelton from Arcadis was present and described the modeling process.

On a motion by Ted Lyons, seconded by Jeff Morgan, the Board approved the Capital Project Authorization: KISS – Act 537 Planning (City funded portion) for \$993,000.00 which includes the Professional Services Authorizations to Arcadis for the 2021 KISS Model Expansion & Calibration in the amount of \$898,000.00 and the Allentown RDII Analysis in the amount of \$60,000.00 (9-0).

MONTHLY FINANCIAL REVIEW

Ed Klein gave an overview of the December 2020 financial statements, highlighting variances between actual expenses and budgeted or forecasted expenses. Kevin Baker asked if the reduction in Suburban Water capital spending was due to timing. Chuck Volk explained that the Buss Acres and Kohler Tract projects had major setbacks due to COVID-19 and the spending will be carried over into 2021. Liesel Gross noted that January financial statements will be provided at the next meeting. Ed Klein reported that the audit is still on schedule at this point, but there may be challenges with receiving timely information from the Pennsylvania Municipal Retirement System, which could potentially delay the audit.

MONTHLY SYSTEM OPERATIONS OVERVIEW

John Parsons reviewed the January 2021 Monthly Systems Overview report highlighting the water utility cybersecurity breach that occurred in Oldsmar, Florida. Mr. Parsons reported that the Authority takes a very proactive stance with system security and the staff remains constantly diligent with every aspect of security.

STAFF COMMENTS

Liesel Gross commented on the recent Texas ice storm that resulted in significant damages to the Texas electric grid and water services. The Authority pays a lot of attention to these incidents and has internal discussions as well. Authority staff will be reviewing the Authority's electric resiliency against power outages. Review of the Authority's preparedness plans are also underway.

Ms. Gross reported on the presentation before the County Commissioners General Services committee on February 10th. Ms. Gross provided the committee a brief update regarding the Authority's past year.

Chairman Nagle reported that there are new guidelines coming out from the Federal Emergency Management Agency (FEMA) regarding floodplains and new maps. He asked that the Authority staff keep this on the radar.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

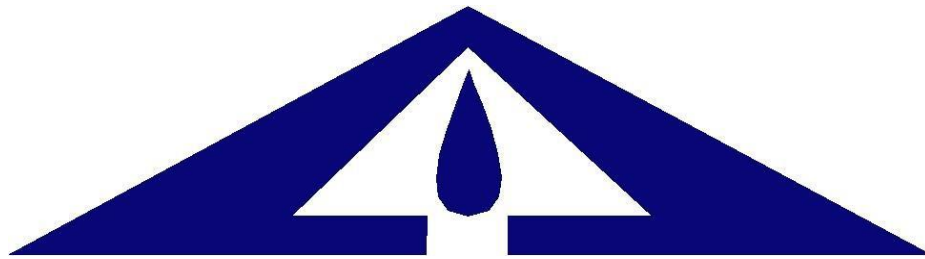
EXECUTIVE SESSION

None.

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 2:10 p.m.

Richard Bohner
Secretary



LEHIGH COUNTY AUTHORITY
ALLENTOWN, PA

DRAFT 5-YEAR CAPITAL PLAN

ALLENTOWN DIVISION

2022-2026

FEBRUARY 2021

**LEHIGH COUNTY AUTHORITY
5-YEAR CAPITAL PLAN
2022-2026**

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2021-2025 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	Prior Administrative Order/Current Regional Flow Management Strategy
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*

(4) *Prior EPA Administrative Order was lifted and projects currently being implemented under DEP Regional Flow Management Strategy*

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
<i>AO/CCRC TBD</i>	Funding to be determined in consultation with The City of Allentown

(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 Opt</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

**LEHIGH COUNTY AUTHORITY
ALLENTOWN DIVISION
CAPITAL PLAN
2022–2026**

SUMMARY

The Allentown Division Capital Plan (Plan) is a five-year plan that covers the years 2022 through 2026. The Plan includes water and wastewater projects to assure facility / infrastructure reliability and to comply with the Lease required projects. It also includes projects and studies deemed necessary by LCA, where the latter will identify and evaluate upgrades and improvements that will be incorporated in future Capital Plans. The Lease requires that LCA submit a 5-year Capital Plan to the City for review and approval.

The projects identified in the Plan fall into two primary categories, those funded by LCA and those funded by the City, with the latter further categorized as Regional Flow Management Strategy (RFMS) projects and Uncompleted Work (UW).

Regional Flow Management Strategy (RFMS) Projects: This includes projects necessary to bring the City’s wastewater system into compliance with the DEP-mandated Regional Flow Management Strategy (RFMS), which replaces the US Environmental Protection Agency (USEPA) Administrative Order to eliminate Sanitary Sewer Overflows / By-passes at Outfall 003 of the wastewater treatment plant with a comprehensive program to reduce inflow and infiltration into the Kline’s Island Sanitary Sewer Service Area (KISS) wastewater systems. Pursuant to the Concession Lease Agreement (Lease), the City is responsible for making all decisions related to work to be performed on the City’s infrastructure and for funding said work. LCA is responsible for the execution of the work.

Uncompleted Work (UW) Projects: This category includes projects that the City expected to be completed before the Lease began, but were not completed prior to the Lease start. The City and LCA reached an agreement providing that LCA will manage these projects but be reimbursed by the City for all project costs. Of these original projects (the WWTP Bar Rack, Sanitary Sewer Evaluation Study, WWTP SCADA Upgrades, WFP Chemical Building Roof Replacements, the alternate remedy for the Schantz Spring Chlorine Booster Station and Rehabilitation of the 28th Street Elevated Tank), all except the AMR Project have been completed by LCA since the Lease inception.

Funding by Budget Area and category is as follows:

CAPITAL FUNDING 2022-2026					
Budget Area	LCA	CITY			TOTALS
		UW	RFMS	Sub-Total	
Water	\$39,480,400	\$0	\$0	\$0	\$39,480,400
Wastewater	\$24,038,100	\$0	\$2,490,000	\$2,490,000	\$26,528,100
Totals	\$63,518,500	\$0	\$2,490,000	\$2,490,000	\$66,008,500

Water Projects: Focus on regulatory compliance, asset management, immediate and future needs at the Water Filtration Plant (WFP) and addressing the Lease operating standards. The recently completed WFP Master Plan identified capital improvements to address future regulatory requirements and/or operational needs. Amended lease requirements include the annual replacement of 1-mile of aged and/or failing spun and pit cast water main.

Wastewater Projects: The Projects focus on regulatory compliance, asset management, immediate and future needs at the Wastewater Treatment Plant (WWTP) and addressing the Lease operating standards. Projects of note include the replacement of the solids process boiler and HVAC upgrade project and replacement of electrical substation no. 1. In addition, annual funding is available for the replacement and/or rehabilitation of defective sewer mains when warranted.

Additional information regarding these and other projects can be found in the Plan's individual Project Detail Sheets.

Supplemental Revenues: Under the Concession Agreement, LCA is able to charge Capital Cost Recovery Fees and Capital Recovery Fees to City customers. These charges will be applied to all Major Capital Improvements (MCI), which are defined as projects exceeding \$1 million (indexed for inflation in the future) within the proposed Plan. The capital plan includes five (5) potential wastewater MCI project and five (5) potential water MCI projects (not including the annual water main replacement).

FINANCIAL JUSTIFICATION

In 2021 and beyond, LCA anticipates that Capital Projects will be funded through operating revenues and project reserves.

2022-2026 Capital Plan Allentown Division Funding Sources						
	LCA SOURCES			CITY SOURCES		
Budget Area	Contributions	Operating/Capital Reserves	New Borrowing	RFMS	UW	Total Sources
Water	\$0	\$39,480,400	\$0	\$0	\$0	\$39,480,400
Wastewater	\$0	\$24,038,100	\$0	\$2,490,000	\$0	\$26,528,100
Totals	\$0	\$63,518,500	\$0	\$2,490,000	\$0	\$66,008,500

CONDENSED CASH FLOW - CITY DIVISION					
Dollars	2022	2023	2024	2025	2026
User Charges	46,332,169	48,278,254	51,671,202	53,621,007	55,733,907
Other Operating Revenues	349,166	349,166	349,166	349,166	349,166
Non-Operating Revenues	535,439	51,099	486,619	(52,003)	(161,665)
Operating expenses	(20,491,625)	(22,006,374)	(21,966,565)	(22,625,561)	(23,304,327)
Debt Service - Current Debt	(14,729,652)	(15,244,562)	(15,778,457)	(16,331,337)	(16,899,752)
Debt Service - NEW Debt	-	-	-	-	-
Investments Converting to Cash	-	-	-	-	-
Proceeds From NEW Debt	-	-	-	-	-
Capex - Admin Paygo	(550,000)	(525,000)	(512,500)	(362,500)	(87,500)
Capex - Paygo	(10,900,250)	(11,366,500)	(11,203,900)	(16,804,000)	(15,733,850)
Capex - NEW Borrowing	-	-	-	-	-
NET FUND FLOWS	545,247	(463,917)	3,045,565	(2,205,228)	(104,021)
User Charge Revenue Increase %	3.0%	3.0%	3.0%	3.0%	3.0%
Operating Cash Balance	10,105,459	10,852,458	10,832,826	11,157,811	11,492,545
Days on Hand	180	180	180	180	180
Project Reserve Balance	2,825,055	1,614,139	4,679,336	2,149,123	1,710,368
DEBT SERVICE COVERAGE RATIO	1.75	1.72	1.88	1.91	1.93

WATER

LEHIGH COUNTY AUTHORITY
ALLENTOWN DIVISION
2022-2026 CAPITAL PROGRAM
WATER

Project #	Name or Title of Proposal	Proj. Category	Approval Stage (1)	Plan Total Cost	This Capital Program							Prior Project Cost (3)	Future Project Cost (3)	Total Project Cost
					2021 Budget Approved	2022 Year 1	2023 Year 2	2024 Year 3	2025 Year 4	2026 Year 5	2022-2026 Total			
	OPERATING/CAPITAL RESERVE FUNDS													
	ANNUAL PROJECTS													
AD-W-A	Annual Projects	AM - Varies	A	\$ 9,466,750	\$ 1,590,000	\$ 1,554,250	\$ 1,491,500	\$ 1,632,000	\$ 1,614,500	\$ 1,584,500	\$ 7,876,750	\$0		\$9,466,750
	TOTAL ANNUAL PROJECTS			\$ 9,466,750	\$ 1,590,000	\$ 1,554,250	\$ 1,491,500	\$ 1,632,000	\$ 1,614,500	\$ 1,584,500	\$ 7,876,750	\$ -	\$ -	\$ 9,466,750
	OPERATING RESERVES													
AD-W-1	Indenture Improvements	AM-high	C	\$ 900,000	\$ -	\$ 300,000	\$ 200,000	\$ 200,000	\$ 100,000	\$ 100,000	\$ 900,000	\$0		\$900,000
AD-W-7	Water Main Replacements (2)	CA/OS	C	\$ 16,383,650	\$ 1,900,000	\$ 1,947,500	\$ 1,996,200	\$ 2,046,100	\$ 4,194,500	\$ 4,299,350	\$ 14,483,650	\$12,900,000		\$29,283,650
AD-W-9	Various Water System Related Studies	CA/OS	S	\$ 150,000	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ 150,000	\$300,000	0	\$450,000
AD-W-16	Water Meter Replacement Program	AM-High	P	\$ 2,270,000	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 770,000	\$ 2,270,000	\$0		\$2,270,000
AD-W-21	Fixed-Base Meter Reading System	Efficiency	P	\$ 1,700,000	\$ -	\$ -	\$ -	\$ -	\$ 850,000	\$ 850,000	\$ 1,700,000	\$0	\$0	\$1,700,000
AD-W-22	Filter Upgrades	Master Plan	P	\$ 6,100,000	\$ -	\$ 50,000	\$ 50,000	\$ 300,000	\$ 2,850,000	\$ 2,850,000	\$ 6,100,000	\$0	\$0	\$6,100,000
AD-W-23	Intake Upgrades	Master Plan	P	\$ 1,900,000	\$ -	\$ 200,000	\$ 1,200,000	\$ 500,000		\$ -	\$ 1,900,000	\$0	\$0	\$1,900,000
AD-W-25	Tank and Reservoir Rehabilitation	AM-high	V	\$ 1,500,000	\$ -	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,500,000	\$0		\$1,500,000
AD-W-26	Large Diameter Valve Repoacement Project	AM-high	P	\$ 1,500,000		\$ 100,000	\$ 700,000	\$ 700,000	\$ -	\$ -	\$ 1,500,000	\$0		\$1,500,000
	TOTAL OPERATING REVENUE PROEJCTS			\$ 32,403,650	\$ 1,900,000	\$ 3,047,500	\$ 4,446,200	\$ 4,046,100	\$ 9,794,500	\$ 9,169,350	\$ 30,503,650	\$ 13,200,000	\$ -	\$ 45,603,650
	BORROWED FUNDS													
AD-W-24	High Lift VFD/Pump Replacements (2)	Master Plan	C	\$ 1,900,000	\$ 800,000	\$ 1,100,000	\$ -	\$ -	\$ -	\$ -	\$ 1,100,000	\$175,000	\$0	\$2,075,000
	TOTAL BORROWED FUNDS PROJECTS			\$ 1,900,000	\$ 800,000	\$ 1,100,000	\$ -	\$ -	\$ -	\$ -	\$ 1,100,000	\$ 175,000	\$ -	\$ 2,075,000
	CITY FUNDED													
AD-W-15	ltron/AMR Meter Project	CA/OS	C	\$ 85,000	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	0	\$85,000
	TOTAL CITY FUNDED SOURCES			\$ 85,000	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0	\$ -	\$ 85,000
	GRAND TOTAL			\$ 43,855,400	\$ 4,375,000	\$ 5,701,750	\$ 5,937,700	\$ 5,678,100	\$ 11,409,000	\$ 10,753,850	\$ 39,480,400	\$ 13,375,000	\$ -	\$ 57,230,400

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents
(2) Projects already approved by City as Major Capital Improvement / CCRC projects
(3) If blank project cost is not applicable (annual/repeating cost) or to be determined

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

Project Name	ANNUAL PROJECTS						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-A
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CV/JP

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)	40	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		

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Detailed Project Description
This annual project includes the following: New & Replacement Meter Installations, Distribution Mains - Development & Service Connections, Distribution Mains - Upsizing, Other Equipment, WFP General Improvements, PennDOT relocations, Mobile Equipment, reservoir rehab/maintenance, Indenture report preparation, General Water System Replacements/Improvements, Capital Management, and various water system studies.

Project Drivers and Needs to be Met by the Project
Primary project drivers are asset management (to maintain level of service and system longevity) and system improvement. Annual projects that help maintain the operation of the distribution system and the WFP.

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

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
Annual cost impact to be determined as needed.

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

Prior Project Cost	N/A
Estimated Project Costs:	2022-2026
LCA Staff	\$ 500,000
Land Acquisition	
Construction/Equipment	\$ 7,666,750
Professional Services	\$ 500,000
Other	\$ 300,000
Contingencies	\$ 500,000
Total Project Cost	\$ 9,466,750

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

Requested in this Capital Program	\$ 7,876,750
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		Need	Phase of Work
2021 Budget		\$ 1,590,000	procurement, planning, design & construction
1st Year	2022	\$ 1,554,250	procurement, planning, design & construction
2nd Year	2023	\$ 1,491,500	procurement, planning, design & construction
3rd Year	2024	\$ 1,632,000	procurement, planning, design & construction
4th Year	2025	\$ 1,614,500	procurement, planning, design & construction
5th Year	2026	\$ 1,584,500	procurement, planning, design & construction

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

Project Name	INDENTURE REPORT IMPROVEMENTS						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-I
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		TC

Purpose of Expenditure (check all that apply)	
<input checked="" 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)	40	Project inception date	2016
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		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories are positively impacted.

Detailed Project Description
This project includes the following, but not limited to: 1. General repairs on concrete, reinforcing steel and exposed wood; 2. Pipe protection upgrades including preparation, painting and dehumidification particularly sub-grade sites; 3. Structural upgrades including roofs; 4. Water tank and reservoir upgrades; 5. Security upgrades including fencing, lighting and vegetation control; 6. Electrical upgrades.

Project Drivers and Needs to be Met by the Project
The primary project driver is asset management. This project addresses the deficiencies identified in the annual Indenture Report. Funding needed to address the deficiencies is roughly split 50% between the sewer system and 50% between the water system.

Project Status - Describe what work, if any has been completed or underway for this project
A number of roofs have been completed in Phase 1 of a prior roof project (2016). Phase 2 included roofs on buildings in the distribution system and at the WWTP (2018). Phase 3 (date is to be determined) will include three roofs at the WFP and two roofs at the WWTP. In addition, minor routine maintenance was performed in 2019 as it relates to Indenture projects. 2021 Indenture upgrade work will include some concrete repairs at the WFP and concrete repairs at reservoirs; this was budgeted under the 2021 annual water projects.

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
Annual cost impact to be determined as needed.

Project No.	AD-W-I
Project Name	INDENTURE REPORT IMPROVEMENTS

Prior Project Cost	\$0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 600,000
Professional Services	\$ 150,000
Other	
Contingencies	\$ 100,000
Total Project Cost	\$ 900,000

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

Requested in this Capital Program	\$ 900,000
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		Need	Phase of Work
2021 Budget		\$ -	design & construction
1st Year	2022	\$ 300,000	design & construction
2nd Year	2023	\$ 200,000	design & construction
3rd Year	2024	\$ 200,000	design & construction
4th Year	2025	\$ 100,000	construction
5th Year	2026	\$ 100,000	construction

This project is unfunded.

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

Project Name	WATER MAIN REPLACEMENTS						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-7
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	CA/OS	Secondary	AM - High	Preparer		JMP

Purpose of Expenditure (check all that apply)		
<input checked="" type="checkbox"/> New Facility (replacement)	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	<input checked="" type="checkbox"/> Other (explain): Lease requirement	

Additional Information			
Expected Useful Life (Years)	100	Project inception date	2014
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2062
Will the Project Require Obtaining Land Rights	N/A		

Detailed Project Description
Through the Operating Standards of the Concession Agreement, LCA is required to replace 2-miles of pipe per year until such time as the City deems it not necessary as a majority of the City's water distribution system is pit cast iron or spun cast iron mains. Some of the pit cast mains date back to the turn of the century, however the spun cast mains have a higher failure. Although the entire system will be evaluated, LCA will work closely with the City Streets department to coordinate main replacements in advance of the annual City Street paving schedule. Note: In 2020, LCA did not perform any main replacements while lease negotiations were on-going with the City. The re-negotiated Lease requires the replacement of 1 mile of water main per year until 2025, at which time 2 miles of main replacement will be required.

Project Drivers and Needs to be Met by the Project
Primary project drivers are lease requirements and asset management. Replacing cast iron mains will reduce the frequency of breaks in the system which create customer outages and unaccounted for water, and will reduce the potential for damage which can occur to private property from catastrophic pipe breaks.

Project Status - Describe what work, if any has been completed or underway for this project
As of the end of 2019, the replacement of 9.00 miles of water main was completed. In 2020 the design of the next phase of water main replacement (Cycle 5) was started, although no main was replaced that year. Cycle 5 main replacement will be completed in 2021, followed by the next annual cycles of prioritized water main replacement.

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
N/A

Project No.	AD-W-7
Project Name	WATER MAIN REPLACEMENTS

Prior Project Cost	\$12,900,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 400,000
Land Acquisition	\$ -
Construction/Equipment	\$ 14,083,650
Professional Services	\$ 1,500,000
Other	\$ -
Contingencies	\$ 400,000
Total Project Cost	\$ 16,383,650

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

Requested in this Capital Program	\$ 14,483,650
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		Need	Phase of Work
2021 Budget		\$ 1,900,000	design & construction
1st Year	2022	\$ 1,947,500	design & construction
2nd Year	2023	\$ 1,996,200	design & construction
3rd Year	2024	\$ 2,046,100	design & construction
4th Year	2025	\$ 4,194,500	design & construction
5th Year	2026	\$ 4,299,350	design & construction

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

Project Name	VARIOUS WATER SYSTEM RELATED STUDIES						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-9
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	CA/OS	Secondary	Planning	Preparer		TC

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)	N/A	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	TBD
Will the Project Require Obtaining Land Rights	N/A		

Detailed Project Description
As infrastructure ages and regulations become more stringent, there are periodic needs for professional services to study the feasibility of changes, upgrades, etc. The following study is requested in 2022: (1) WFP Master Plan. This is a requirement of the Lease as some original components of the Allentown WFP are over 60 years.

Project Drivers and Needs to be Met by the Project
Engineering studies are periodically required to address feasibility of implementing new programs or changing existing ones. The WFP Master Plan is a requirement of the Lease Agreement and is to be completed every 5 years. The first Master Plan was completed in 2017 and the second installment will be completed in 2022.

Project Status - Describe what work, if any has been completed or underway for this project
The first Master Plan was completed in 2017.

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
Annual cost impact to be determined as needed.

Project No.	AD-W-9
Project Name	VARIOUS WATER SYSTEM RELATED STUDIES

Prior Project Cost	300,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 25,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 110,000
Other	\$ -
Contingencies	\$ 15,000
Total Project Cost	\$ 450,000

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

Requested in this Capital Program	\$ 150,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ 150,000	Master Plan
2nd Year	2023	\$ -	
3rd Year	2024	\$ -	
4th Year	2025	\$ -	
5th Year	2026	\$ -	

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

Project Name	METER REPLACEMENT PROGRAM						
Budget Area	Water	Department	Capital Works	Date	2/19/2021	Project	AD-W-16
Location	Allentown			Prj. Type	Regular	Prj.	CCRC
Prj. Category	Primary	AM-varies	Secondary	rev oport	Preparer	ALK	

Purpose of Expenditure (check all that apply)			
	New Facility		Correct Known or Potential Safety Issue
	Existing Facility - Rehabilitation/Upgrade	X	Equipment Obsolete
X	Scheduled Replacement		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	2021
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A		
Will the Project Require Obtaining Land Rights	N/A	Anticipated Project completion date	2026

Detailed Project Description
<p>There are approximately 4,300 badger water meters ranging in size from 5/8" to 2" that are currently being used to monitor water consumption in the city. These sites were not a part of the original City of Allentown AMR project in 2012/2013. The sites also have existing but outdated Encoder Receiver Transmitters (ERTs) which are now approaching the end of their useful lives. Should LCA decide to implement Project AD-W-21 (Fixed Base AMR), the outdated 40W/50W/60W ERTs will not be readable on the new system. Radio read capability is included on all meter exchanges, allowing for mobile read application.</p>

Project Drivers and Needs to be Met by the Project
<p>The Badger meters have an outdated style radio that is incorporated into the meter and cannot be replaced separately. The old style radio does not include data logging or tamper alarms. Replacement of meters that may not be registering all water usage or have faulty radios is expected to reduce the amount of non-revenue water. Analysis of metering data will allow for enhanced customer service including data-backed resolution of customer metering complaints, flow analysis and other useful functions. In addition, the data will be used in identifying and addressing customer metering issues.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>No work to date.</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	5.50%
Term (Years)	30

Explanation if Necessary
<p>Annual cost impact to be determined as needed.</p>

Project No.	AD-W-16
Project Name	METER REPLACEMENT PROGRAM

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$40,000
Land Acquisition	\$ -
Construction/Equipment	\$2,170,000
Professional Services	\$10,000
Other Contingencies	\$50,000
Total Project Cost	\$2,270,000

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

Requested in this Capital Program	\$ 2,270,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ -	
3rd Year	2024	\$ -	
4th Year	2025	\$ 1,500,000	procurement & construction
5th Year	2026	\$ 770,000	construction

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

Project Name	FIXED-BASE METER READING SYSTEM						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-21
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	Sys Imp	Preparer		BB/ALK

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
<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	2018
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2026
Will the Project Require Obtaining Land Rights	N/A		

Detailed Project Description
The City of Allentown's original AMR project started in 2011 and ran until 2013. There were insufficient funds from the Pennvest Loan to cover all 33,000 water meters. The original AMR was installed as a hybrid system which is upgradeable to a fixed-base system. A fixed-base system provides instantaneous readings of any water meter via a radio signal sent directly to the customer care center through a series of transmitters (exact number is to be determined) and repeaters installed throughout the water system service area.

Project Drivers and Needs to be Met by the Project
The primary project drivers are efficiency and system improvement. A fixed-base system would allow for instantaneous readings (and monthly reads) on any account. In order to implement the fixed base system, data analytics software must be procured and installed to house the enormous volume of data that will accumulate. The data analytics software was an original component of the City's AMR project. This software is planned for purchase under AD-W-15 in 2021.

Project Status - Describe what work, if any has been completed or underway for this project
No work has been done to date. Implementation is anticipated to begin in 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
Annual cost impact to be determined as needed.

Project No.	AD-W-21
Project Name	FIXED-BASE METER READING SYSTEM

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 90,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,100,000
Professional Services	\$ 110,000
Other	\$ 200,000
Contingencies	\$ 200,000
Total Project Cost	\$ 1,700,000

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

Requested in this Capital Program	\$ 1,700,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ -	
3rd Year	2024	\$ -	
4th Year	2025	\$ 850,000	procurement & construction
5th Year	2026	\$ 850,000	procurement & construction

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

Project Name	FILTER UPGRADES						
Budget Area	Water	Department	Operations	Date	1/27/2021	Project No.	AD-W-22
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	Master Plan	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 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)	Varies	Project inception date	2018
Approx. No. of Customers Benefitted	*		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2030
Will the Project Require Obtaining Land Rights	N/A		

*All customers of the City of Allentown, Central Lehigh Division and bulk water sales to other municipalities.

Detailed Project Description
The filter underdrains are nearly 60 years old and have exceeded their service life. A recent inspection of the underdrain in Filter No. 6 determined that the underdrains are in poor condition and must soon be replaced. In addition, a number of filter components are obsolete including the filter control valves and filter control panels. Also, there has been difficulty in obtaining spare parts. Properly functioning filter underdrains, coupled with optimized filter media and backwash routines, will be critical to maintaining regulatory compliance.

Project Drivers and Needs to be Met by the Project
The primary project drivers are asset management (Master Plan), system improvement, and regulatory compliance. Primary benefit will be enhanced regulatory compliance, improved operability and reduced maintenance. Secondary benefits include better asset management and process reliability. In addition, replacing the underdrains and rebuilding the filters will allow for the addition of air scour auxiliary wash and modified media configuration, which will improve reliability and performance of the filters.

Project Status - Describe what work, if any has been completed or underway for this project
This evaluation was completed in 2017 as part of the Water Filtration Plant Master Plan project. This project cost assumes two filters will be rehabilitated in 2025 and two in 2026. If the remaining four filters are to be rehabilitated, this Project will carry on beyond 2026.

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
Annual cost impact to be determined as needed.

Project No.	AD-W-22
Project Name	FILTER UPGRADES

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 5,450,000
Professional Services	\$ 300,000
Other	\$ 50,000
Contingencies	\$ 200,000
Total Project Cost	\$ 6,100,000

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

Requested in this Capital Program	\$ 6,100,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ 50,000	study
2nd Year	2023	\$ 50,000	preliminary engineering
3rd Year	2024	\$ 300,000	design & permitting
4th Year	2025	\$ 2,850,000	construction
5th Year	2026	\$ 2,850,000	construction

This project is unfunded.

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

Project Name	INTAKE UPGRADES						
Budget Area	Water	Department	Operations	Date	1/27/2021	Project No.	AD-W-23
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	Master Plan	Secondary	Sys Imp	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
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input 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)	Varies	Project inception date	2018
Approx. No. of Customers Benefitted	*		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	TBD
Will the Project Require Obtaining Land Rights	N/A		

*All customers of the City of Allentown, Central Lehigh Division and bulk water sales to other municipalities.

Detailed Project Description
The Master Plan includes multiple upgrade phases: (1) the Big Lehigh intake facility is limited to 3 MGD due to taste and odor complaints and manual cleaning of the existing bar screens. This portion of the project will include the installation of traveling screens/screenings handling facility at the Big Lehigh facility; (2) replace the existing traveling screen in the 1953 Little Lehigh screening building until a new intake/screenings facility can be constructed (this phase is within the 5-year capital plan); (3) new 30 MGD Little Lehigh intake structure and screenings building including coarse screens, traveling screens and screenings handling facilities. In addition, new buried piping and tie-in connection to the existing raw water line is needed.

Project Drivers and Needs to be Met by the Project
Asset management, regulatory compliance, enhanced redundancy, improved process reliability, improved operations and maintenance and improved water quality are the project drivers.

Project Status - Describe what work, if any has been completed or underway for this project
This evaluation was completed in 2017 as part of the Water Filtration Plant Master Plan project. The first phase of this project consists of replacement of the existing Little Lehigh mechanical screen with some additional miscellaneous upgrades. This is the short term recommendation in the Master Plan. The long term recommendation includes a second intake structure (see above), which is not included within this 5-year 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
Annual cost impact to be determined as needed.

Project No.	AD-W-23
Project Name	INTAKE UPGRADES

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,650,000
Professional Services	\$ -
Other	\$ 50,000
Contingencies	\$ 100,000
Total Project Cost	\$ 1,900,000

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

Requested in this Capital Program	\$ 1,900,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ 200,000	design & permitting
2nd Year	2023	\$ 1,200,000	construction
3rd Year	2024	\$ 500,000	construction
4th Year	2025	\$	
5th Year	2026	\$ -	

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

Project Name	TANK AND RESERVOIR REHABILITATION						
Budget Area	Water	Department	Operations	Date	1/27/2021	Project No.	AD-W-25
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Master Plan	Secondary	Sys Imp	Preparer		TC

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 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)	Varies	Project inception date	2018
Approx. No. of Customers Benefitted	*		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	Ongoing
Will the Project Require Obtaining Land Rights	N/A		

*All customers of the City of Allentown, Central Lehigh Division and bulk water sales to other municipalities.

Detailed Project Description
The project involves the mechanical upgrades, surface coatings and miscellaneous rehabilitation and repair of the high-level pumping stations, concrete tanks, and concrete reservoirs: (a) Schantz Spring Reservoir, (b) Huckleberry Ridge Reservoir, (c) South Mountain Reservoir, (d) East Side Reservoir, (e) Wash Water Tank, (f) Halstead Pump Station. The majority of the work will be located on the exterior of the tanks and within the adjacent process piping systems, but may include interior repairs and upgrades. This work would encompass work such as replacement of process valves, actuators, painting, HVAC, building rehabilitation, electrical components, and mixing systems. It would also encompass work to the interior of the three large concrete reservoirs which is not currently covered under a service agreement.

Project Drivers and Needs to be Met by the Project
Enhanced process and physical redundancy, improved operations and maintenance, and asset management are the project drivers.

Project Status - Describe what work, if any has been completed or underway for this project
This project was identified in 2017 as part of the Water Filtration Plant Master Plan project. The Master Plan's scope for this project is also linked to AD-W-I (Indenture Report Improvements); therefore, a portion of this project is allocated to that capital number as well.

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
Annual cost impact to be determined as needed.

Project No.	AD-W-25
Project Name	TANK AND RESERVOIR REHABILITATION

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,200,000
Professional Services	\$ 180,000
Other	\$ 10,000
Contingencies	\$ 60,000
Total Project Cost	\$ 1,500,000

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

Requested in this Capital Program	\$ 1,500,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ 300,000	design & construction
2nd Year	2023	\$ 300,000	design & construction
3rd Year	2024	\$ 300,000	design & construction
4th Year	2025	\$ 300,000	design & construction
5th Year	2026	\$ 300,000	design & construction

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

Project Name	LARGE DIAMETER VALVE REPLACEMENT PROJECT						
Budget Area	Water	Department		Date	1/27/2021	Project No.	AD-W-26
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Sys Imp	Preparer		CV/JG

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 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)	40	project inception date	2020
Approx. No. of Customers Benefitted	*		
Is this System part of a Common User Rate?	N/A	project completion date	2022
Will the Project Require Obtaining Land Rights	N/A		

*All customers of the City of Allentown, Central Lehigh Division and bulk water sales to other municipalities.

Detailed Project Description
<p>This is a multi-year project to replace critical large diameter valves. The existing 36-inch cast iron water main that supplies the city with water from the South Mountain Reservoir is nearly 100 years old and has numerous large diameter valves that are inoperable or no longer seal properly. The valves have manual or electrical actuators and the current condition does not allow for isolation of the Reservoir in event of main breakage or maintenance. There are other critical large diameter valves that supply the city and the LCA Suburban Division that are inoperable or do not seal properly that require replacement as well.</p>

Purpose and Needs to be Met by the Project
<p>The replacement of critical inoperable major water supply valves will allow for isolating of reservoirs and other areas of the distribution system in event of a water main break or other essential maintenance operations.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>The inception of this project is the result of a major break in the South Mountain transmission main that occurred in late 2020 and required emergency repair. The inoperable or otherwise poor condition of the valves on this line and adjacent connecting mains justify the need to replace key system valves as a separate project.</p>

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	AD-W-26
Project Name	LARGE DIAMETER VALVE REPLACEMENT PROJECT

Prior Project Cost	0
Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	
Construction/Equipment	\$ 1,300,000
Professional Services	\$ 100,000
Other	
Contingencies	\$ 50,000
Total Project Cost	\$ 1,500,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 1,500,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid Reserves
2021 Budget		\$ -			
1st Year	2022	\$ 100,000			
2nd Year	2023	\$ 700,000			
3rd Year	2024	\$ 700,000			
4th Year	2025				
5th Year	2026				

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

Project Name	HIGH LIFT VFD/PUMP REPLACEMENTS						
Budget Area	Water	Department	Operations	Date	1/27/2021	Project No.	AD-W-24
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	Master Plan	Secondary	Sys Imp	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
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input 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)	Varies	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	N/A		

*All customers of the City of Allentown, Central Lehigh Division and bulk water sales to other municipalities.

Detailed Project Description
A feasibility study was performed to perform a condition assessment and evaluate and select pump capacities to meet current and future demands while operating at peak efficiency. The study evaluated replacing the aging high lift pumps, motors, and VFD, along with rehabilitation of the building and support facilities as required. The scope of design generally consists of VFD replacements and associated electrical improvements.

Project Drivers and Needs to be Met by the Project
Asset management, code compliance, physical and process reliability, energy efficiency, improved operations and maintenance are the project drivers for upgrade of this critical system.

Project Status - Describe what work, if any has been completed or underway for this project
An initial evaluation was completed in 2017 as part of the Water Filtration Plant Master Plan project. A 2018 study of this system was conducted to identify replacement alternatives. Design phase was substantially completed in 2020 and a PennVEST loan application was submitted in late 2020. This project scope consists of the installation of three new 2300V VFDs (two existing VFDs are to be replaced and one new VFD is to be installed where no pre-existing VFD exists on an existing constant speed pump). The project will be bid in early 2021 and construction will be completed in 2022.

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
Annual cost impact to be determined as needed.

Project No.	AD-W-24
Project Name	HIGH LIFT VFD/PUMP REPLACEMENTS

Prior Project Cost	\$175,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,600,000
Professional Services	\$ 100,000
Other	
Contingencies	\$ 150,000
Total Project Cost	\$ 2,075,000

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

Requested in this Capital Program	\$ 1,100,000
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		Need	Phase of Work
2021 Budget		\$ 800,000	bidding & construction
1st Year	2022	\$ 1,100,000	construction
2nd Year	2023	\$ -	
3rd Year	2024	\$ -	
4th Year	2025	\$ -	
5th Year	2026	\$ -	

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

Project Name	ITRON/AMR METER PROJECT						
Budget Area	Water	Department	Capital Works	Date	1/27/2021	Project No.	AD-W-15
Location	Allentown			Prj. Type	UW	Prj. Funding	Allentown
Prj. Category	Primary	CA/OS	Secondary	Efficiency	Preparer		PMD

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 checked="" type="checkbox"/> Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	<input 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	2013
Approx. No. of Customers Benefitted	N/A		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2020
Will the Project Require Obtaining Land Rights	N/A		

Detailed Project Description
<p>This completes the remaining work on the City's Automatic Meter Reading (AMR) project. The AMR project is funded by the City and includes the replacement of roughly 27,000 aged residential meters ranging in size from 5/8" to 2" (small meters) and roughly 155 commercial meters that were 3" or greater (large meters) in size. Radio read capability is included on all meter exchanges, allowing for mobile read application. There were 747 small meter installs that were not completed in the city AMR because the sites were either vacant or not accessible. The project also includes the purchase and implementation of Water Analytics software as a service package (to be purchased in 2020) which will analyze water usage data gathered from the meters in the Allentown division, which will be important for tracking and identifying water loss.</p>

Project Drivers and Needs to be Met by the Project
<p>Replacement of aged meters that may not be registering all water usage is expected to reduce the amount of non-revenue water. Analysis of metering data will allow for enhanced customer service including data-backed resolution of customer metering complaints, flow analysis and other useful functions. In addition, the data will be used in identifying and addressing customer metering issues.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Approximately 83 meters out of 747 residential meters remain to be replaced. The City has already paid for these meters. In addition, all of the commercial meters that were included in this project (five in total) have been replaced.</p> <p>Note: One of the commercial meters was removed from the scope in 2017. By the end of 2020, all five of the commercial meters have been replaced with this project. Project is anticipated to be completed in 2021.</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
Annual cost impact to be determined as needed.

Project No.	AD-W-15
Project Name	ITRON/AMR METER PROJECT

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 5,000
Land Acquisition	\$ -
Construction/Equipment	\$ 50,000
Professional Services	\$ 10,000
Other	\$ -
Contingencies	\$ 20,000
Total Project Cost	\$ 85,000

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

Requested in this Capital Program	\$ -
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	Need	Phase of Work
2021 Budget	\$ 85,000	procurement & construction
1st Year 2022	\$ -	
2nd Year 2023	\$ -	
3rd Year 2024	\$ -	
4th Year 2025	\$ -	
5th Year 2026	\$ -	

(1) This is an Uncompleted Work (UW) Project that will be funded by the City of Allentown.

WASTEWATER

LEHIGH COUNTY AUTHORITY
ALLENTOWN DIVISION
2022-2026 CAPITAL PROGRAM
WASTEWATER

Project #	Name or Title of Proposal	Proj. Category	Approval Stage (1)	Total Cost	Plan	This Capital Program							Prior Project Cost (4)	Future Project Cost (4)	Total Project Cost
					Prior Years' (2)	2021 Budget Approved	2022 Year 1	2023 Year 2	2024 Year 3	2025 Year 4	2026 Year 5	2022-2026 Total			
	Operating/Capital Reserve Funds														
	ANNUAL PROJECTS														
AD-S-A	Annual Projects	AM - Varies	A	\$ 11,898,100	\$ -	\$ 1,960,000	\$ 2,133,500	\$ 1,938,800	\$ 1,590,800	\$ 1,870,000	\$ 2,405,000	\$ 9,938,100			\$11,898,100
	TOTAL ANNUAL PROJECTS			\$ 11,898,100	\$ -	\$ 1,960,000	\$ 2,133,500	\$ 1,938,800	\$ 1,590,800	\$ 1,870,000	\$ 2,405,000	\$ 9,938,100	\$0	\$0	\$ 11,898,100
	OPERATING RESERVES														
AD-S-I	Indenture Report Improvements (3)	AM - Varies	C	\$ 1,700,000	\$ -	\$ -	\$ 700,000	\$ 400,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,700,000	\$0		\$1,700,000
AD-S-5	WWTP Electrical Substation Replacement Phase 2	AM - High	D	\$ 3,250,000	\$ -	\$ -	\$ 200,000	\$ 1,250,000	\$ 1,800,000	\$ -	\$ -	\$ 3,250,000	\$2,450,000	\$0	\$5,700,000
AD-S-9	Various Wastewater System Related Studies (Master Plan)	CA/OS	S	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ 150,000	\$150,000		\$300,000
AD-S-19	WWTP Main Pump Station Improvements	AM - Varies	P	\$ 2,600,000	\$ -	\$ -	\$ -	\$ 200,000	\$ 800,000	\$ 1,600,000	\$ -	\$ 2,600,000	\$0	\$0	\$2,600,000
AD-S-20	WWTP Boiler Replacement & Solids Process Upgrade Project (5)	AM - Varies	D	\$ 2,400,000	\$ -	\$ 200,000	\$ 1,200,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ 2,200,000	\$40,000	\$0	\$2,440,000
AD-S-21	WWTP 480V MCC Replacement	AM - Varies	P	\$ 3,250,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ 1,525,000	\$ 1,525,000	\$ 3,250,000	\$0	\$0	\$3,250,000
AD-S-22	WWTP Final Clarifier 1-4 Rehabilitation	AM - Varies	P	\$ 950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ 850,000	\$ 950,000	\$0	\$0	\$950,000
	TOTAL OPERATING RESERVES PROJECTS			\$ 14,300,000	\$ -	\$ 200,000	\$ 2,100,000	\$ 3,000,000	\$ 3,000,000	\$ 3,425,000	\$ 2,575,000	\$ 14,100,000	\$ 2,640,000	\$ -	\$ 16,940,000
	CITY FUNDED PROJECTS														
AD-S-11	Regional Flow Management Strategy (2)	Regulatory	S	\$ 2,415,000	\$ -	\$ 775,000	\$ 465,000	\$ 340,000	\$ 835,000	\$ -	\$ -	\$ 1,640,000	\$665,960		\$3,080,960
AD-S-16	Flow Characterization Study (2)	Regulatory	S	\$ 1,250,000	\$ 1,500,000	\$ 1,250,000	\$ 500,000	\$ 150,000	\$ 100,000	\$ 100,000	\$ -	\$ 850,000	\$0	\$0	\$1,250,000
	TOTAL CITY FUNDED PROJECTS			\$ 3,665,000	\$ 1,500,000	\$ 2,025,000	\$ 965,000	\$ 490,000	\$ 935,000	\$ 100,000	\$ -	\$ 2,490,000	\$665,960	\$0	\$ 4,330,960
	GRAND TOTAL			\$ 29,863,100	\$ 1,500,000	\$ 4,185,000	\$ 5,198,500	\$ 5,428,800	\$ 5,525,800	\$ 5,395,000	\$ 4,980,000	\$ 26,528,100	\$ 3,305,960	\$ -	\$ 33,169,060

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents
(2) "Administrative Order" projects as per the Agreement are to be funded by the City and executed by LCA
(3) Includes Projects from WWTP Master Plan
(4) If blank project cost is not applicable (annual/repeating cost) or to be determined
(5) Project to be reviewed by City in 2021 for Major Capital Improvement/CCRC approval

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

Project Name	ANNUAL PROJECTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-A
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CV/MW

Purpose of Expenditure (check all that apply)	
<input checked="" 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)	40	Project inception date	2014
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		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories are positively impacted.

Detailed Project Description
This is an annual project that has been previously listed as separate projects. This annual project includes the following: Collection System - Development and Service Connections, Other Equipment, WWTP General Improvements, Sanitary Sewer Main Replacements & Rehabilitation, PennDOT relocations, Indenture Report, Capital Management, and Mobile Equipment.

Project Drivers and Needs to be Met by the Project
Asset management and system improvement are the primary drivers. Annual items help maintain the level of service for operation of the wastewater collection/conveyance system and the Kline's Island Wastewater Treatment Plant.

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

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
Annual cost impact to be determined as needed.

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

Prior Project Cost	N/A
Estimated Project Costs:	2022-2026
LCA Staff	\$ 460,000
Land Acquisition	\$ -
Construction/Equipment	\$ 8,528,100
Professional Services	\$ 650,000
Other	\$ 100,000
Contingencies	\$ 200,000
Total Project Cost	\$ 11,898,100

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

Requested in this Capital Program	\$ 9,938,100
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		Need	Phase of Work
2021 Budget		\$ 1,960,000	procurement & construction
1st Year	2022	\$ 2,133,500	procurement & construction
2nd Year	2023	\$ 1,938,800	procurement & construction
3rd Year	2024	\$ 1,590,800	procurement & construction
4th Year	2025	\$ 1,870,000	procurement & construction
5th Year	2026	\$ 2,405,000	procurement & construction

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

Project Name	INDENTURE REPORT IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-I
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		MW

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 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)	40	Project inception date	2016
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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
<p>This project includes the following, but not limited to: 1. General repairs on concrete, reinforcing steel and exposed wood; 2. Pipe protection upgrades including preparation, painting and dehumidification particularly sub-grade sites; 3. Structural upgrades including roofs; 4. Water tank and reservoir upgrades; 5. Security upgrades including fencing, lighting and vegetation control; 6. Electrical upgrades.</p>

Project Drivers and Needs to be Met by the Project
<p>This project addresses the deficiencies identified in the annual Indenture Report, which identifies structural, coatings, security, electrical and other routine upgrades that are needed to maintain the assets.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Minor routine maintenance work was performed in 2019 as it relates to specific items in the Indenture Report. Some of the Indenture projects were also identified in the Master Plan (Projects 7, 11 and 12). The first large project to address indenture report improvements is scheduled for construction in 2021, which was budgeted under the 2021 annual wastewater projects.</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>Annual cost impact to be determined as needed.</p>

Project No.	AD-S-I
Project Name	INDENTURE REPORT IMPROVEMENTS

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 75,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,300,000
Professional Services	\$ 200,000
Other	
Contingencies	\$ 125,000
Total Project Cost	\$ 1,700,000

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

Requested in this Capital Program	\$ 1,700,000
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		Need	Phase of Work
2021 Budget		\$ -	construction
1st Year	2022	\$ 700,000	construction
2nd Year	2023	\$ 400,000	construction
3rd Year	2024	\$ 200,000	construction
4th Year	2025	\$ 200,000	construction
5th Year	2026	\$ 200,000	construction

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

Project Name	VARIOUS WASTEWATER SYSTEM RELATED STUDIES (MASTER PLAN)						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-9
Location	Allentown			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	CA/OS	Secondary	Planning	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 type="checkbox"/> Improved Service	<input type="checkbox"/> Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/> Study	<input checked="" type="checkbox"/> Other (explain): Lease requirement

Additional Information			
Expected Useful Life (Years)	N/A	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	N/A
Will the Project Require Obtaining Land Rights	N/A		

Detailed Project Description
As infrastructure ages and regulations become more stringent, there are periodic needs for professional services to study the feasibility of changes, upgrades, etc. The following study is requested in 2023: WWTP Master Plan. As some original components of the Allentown WWTP are bearing in on 90 years old, a periodic update of the Master Plan is important to monitor the condition and performance of plant processes. This is a requirement of the Lease.

Project Drivers and Needs to be Met by the Project
The primary project driver is city lease requirement. Engineering studies are periodically required to address feasibility of implementing new programs or changing existing ones. The WWTP Master Plan is a requirement of the Lease Agreement and is to be completed every 5 years. The first Master Plan was completed in 2018 and the second installment will be completed in 2023.

Project Status - Describe what work, if any has been completed or underway for this project
The first Master Plan was completed in 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
Annual cost impact to be determined as needed.

Project No.	AD-S-9
Project Name	VARIOUS WASTEWATER SYSTEM RELATED STUDIES (MASTER PLAN)

Prior Project Cost	\$150,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 10,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 130,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 300,000

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

Requested in this Capital Program	\$ 150,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ 150,000	planning
3rd Year	2024		
4th Year	2025	\$ -	
5th Year	2026	\$ -	

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

Project Name	WWTP ELECTRICAL SUBSTATION REPLACEMENT						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-5
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
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 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)	40	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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories are positively impacted.

Detailed Project Description
<p>This project includes the replacement of existing electrical substation #1 with a new electrical substation at the Kline's Island Wastewater Treatment Plant. The existing 12.4kV switchgear will also be replaced. Substation #2 (Phase 1) was replaced in 2019. The switchgear and Substation #1 (Phase 2) construction is scheduled for 2023 and 2024.</p>

Project Drivers and Needs to be Met by the Project
<p>Asset management, efficiency and regulatory compliance are the project drivers. The WWTP contains 12.4kV switchgear and two substations (Substation Nos. 1 and 2). The equipment was installed in the 1970s and has reached the end of its useful life. In addition, prior to its recent replacement, substation #2 was overloaded during high flow events. These are critical pieces of electrical equipment that must continue to function properly in order to power the facility. Replacement of the equipment will provide electrical reliability from PP&L for the next 40 years at the WWTP.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>An engineering study for Substation Nos. 1 and 2 was completed in 2016, followed up by the completion of design in 2018. Substation #2 was replaced in 2019. Substation #1 and the switchgear will be replaced in 2023 and 2024 (Phase 2).</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>Annual cost impact to be determined as needed.</p>

Project No.	AD-S-5
Project Name	WWTP ELECTRICAL SUBSTATION REPLACEMENT

Prior Project Cost	2,450,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,800,000
Professional Services	\$ 250,000
Other	
Contingencies	\$ 100,000
Total Project Cost	\$ 5,700,000

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

Requested in this Capital Program	\$ 3,250,000
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		Need	Phase of Work
2021 Budget			
1st Year	2022	\$ 200,000	design, permitting, bidding
2nd Year	2023	\$ 1,250,000	construction
3rd Year	2024	\$ 1,800,000	construction
4th Year	2025	\$ -	
5th Year	2026	\$ -	

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

Project Name	WWTP MAIN PUMP STATION IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-19
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CEV

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 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)	40	Project inception date	
Approx. No. of Customers Benefitted	*		2018
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	
Will the Project Require Obtaining Land Rights	N/A		2025

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
The main headworks pump station at the Kline's Island Wastewater Treatment Plant is critical to plant performance and the ability to maximize wet-weather flow into the KIWWTP. The existing pumps are 50 years old and approaching the end of their useful life. Valves and piping are corroded and predate the 1965 upgrade. Replacement of the valves and piping is required to allow maintenance to occur while simultaneously keeping the pumping station operational.

Project Drivers and Needs to be Met by the Project
The project drivers are asset management and system improvement. Pump replacement will provide improved equipment reliability and reduced long-term maintenance costs.

Project Status - Describe what work, if any has been completed or underway for this project
This project was identified in the 2018 Master Plan (Project 1). These pumps were also previously planned to be replaced as part of the blending project improvements (project on hold at 30% design). Project funding is to be determined. Design phase is scheduled to commence in 2023.

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
Annual cost impact to be determined as needed.

Project No.	AD-S-19
Project Name	WWTP MAIN PUMP STATION IMPROVEMENTS

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,200,000
Professional Services	\$ 200,000
Other	
Contingencies	\$ 100,000
Total Project Cost	\$ 2,600,000

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

Requested in this Capital Program	\$ 2,600,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ 200,000	design & permitting
3rd Year	2024	\$ 800,000	construction
4th Year	2025	\$ 1,600,000	construction
5th Year	2026	\$ -	

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

Project Name	WWTP BOILER REPLACEMENT AND SOLIDS PROCESS HVAC UPGRADE PROJECT						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-20
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	Sys Imp	Secondary	AM - Varies	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 checked="" 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)	30	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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
<p>This project involves the replacement of the 3 boiler system that is used to heat the digesters, the digester building, and the sludge dewatering area. The scope includes, but is not limited to, the following new equipment and modifications: 1) 2 each dual fuel digester boilers; 2) digester building addition to house new boilers; 3) new methane booster pumps and gas piping; 4) new hot water recirculation pumps with expansion tank and associated piping; 5) new hot water air handling units and circulators in digester building, boiler room, and dewatering room; 6) SCADA system integration; 7) sprinkler system extension into new building; 8) new boiler water treatment system; 9) demolition and removal of old boilers, piping and related abandoned mechanical equipment.</p>

Project Drivers and Needs to be Met by the Project
<p>Asset management is the primary project driver, as the equipment has reached the end of its useful life and this equipment is critical to the operation of the plant anaerobic digestion system. In addition, this project will reduce maintenance costs.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>This project was identified in the 2018 Master Plan (Project 3). A conceptual engineering report (basis of design) was submitted to the City in early 2021 per Lease requirements for major capital improvement (MCI) project protocol. Design phase will be completed in 2021 and construction phase is anticipated for 2022 into 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>Annual cost impact to be determined as needed.</p>

Project No.	AD-S-20
Project Name	WWTP BOILER REPLACEMENT AND SOLIDS PROCESS HVAC UPGRADE PROJECT

Prior Project Cost	\$40,000
Estimated Project Costs:	2022-2026
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,850,000
Professional Services	\$ 300,000
Other	
Contingencies	\$ 200,000
Total Project Cost	\$ 2,440,000

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

Requested in this Capital Program	\$ 2,200,000
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		Need	Phase of Work
2021 Budget		\$ 200,000	design & permitting
1st Year	2022	\$ 1,200,000	construction
2nd Year	2023	\$ 1,000,000	construction
3rd Year	2024	\$ -	
4th Year	2025	\$ -	
5th Year	2026	\$ -	

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

Project Name	WWTP 480V MCC REPLACEMENT						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-21
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CEV

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 checked="" 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)	40	Project inception date	2018
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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
Various 480V electrical motor control centers (MCCs) throughout the plant have exceeded their useful service life and should be replaced since a loss of power to key critical processes' mechanical components may affect the ability to both maintain mandated treatment permit levels and the requirements of the prior Administrative Order (now RFMS). Scope of work includes the following MCC replacements: Intermediate Pump Station (IPS) 6 and 7, Primary Sludge Pump Station (PSPS) 8 and 9, Auxiliary Pump Station (APS) 12 and 13, Primary Settling Tank Pump Station (PST) 14 and 15, Odor Control Unit (OCU) 1 and 3, and Effluent Pump Station (EPS) 4. Additional work may include Final Pump Station (FPS) 2, 3, and 4. Also new VFDs for Primary Effluent (PE) Pumps 7, 9, 11 and Plastic Media Trickling Filters (PMTF) Pumps 12, 14, and 16.

Project Drivers and Needs to be Met by the Project
An increase in operational reliability would be realized with new motor control centers and breakers, and a reduction in maintenance costs would result as older, failure prone equipment is replaced with newer equipment.

Project Status - Describe what work, if any has been completed or underway for this project
This project was identified in the 2018 Master Plan (Project 10).

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
Annual cost impact to be determined as needed.

Project No.	AD-S-21
Project Name	WWTP 480V MCC REPLACEMENT

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,750,000
Professional Services	\$ 200,000
Other	\$ -
Contingencies	\$ 200,000
Total Project Cost	\$ 3,250,000

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

Requested in this Capital Program	\$ 3,250,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ -	
3rd Year	2024	\$ 200,000	design & permitting
4th Year	2025	\$ 1,525,000	construction
5th Year	2026	\$ 1,525,000	construction

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

Project Name	WWTP FINAL CLARIFIER 1-4 REHABILITATION						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-22
Location	Allentown			Prj. Type	LCA-MCI	Prj. Funding	CCRC
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CEV

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 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)	40	Project inception date	2018
Approx. No. of Customers Benefitted	*		
Is this System part of a Common User Rate?	N/A	Anticipated Project completion date	2027
Will the Project Require Obtaining Land Rights	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
This project includes the following, but not limited to: 1) mechanism and drive replacement on all four clarifiers; 2) miscellaneous concrete repairs to all four clarifiers.

Project Drivers and Needs to be Met by the Project
The primary project driver is asset management. This project addresses the deficiencies with the existing Final Clarifiers Nos. 1 - 4 as identified in the Master Plan (Project 14). The concrete tanks are from 1931 and the mechanical equipment (operated 24/7) is from the late 1960s.

Project Status - Describe what work, if any has been completed or underway for this project
This project was identified both in the 2018 Master Plan (Project 14) and in a 2016 concrete report by Corrosion Probe. This project scope consists of the replacement of the four drive mechanisms and associated mechanical equipment. The work anticipated to begin construction in 2026 and finish in 2027.

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
Annual cost impact to be determined as needed.

Project No.	AD-S-22
Project Name	WWTP FINAL CLARIFIER 1-4 REHABILITATION

Prior Project Cost	0
Estimated Project Costs:	2022-2026
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 800,000
Professional Services	\$ 70,000
Other	
Contingencies	\$ 50,000
Total Project Cost	\$ 950,000

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

Requested in this Capital Program	\$ 950,000
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		Need	Phase of Work
2021 Budget		\$ -	
1st Year	2022	\$ -	
2nd Year	2023	\$ -	
3rd Year	2024	\$ -	
4th Year	2025	\$ 100,000	procurement & construction
5th Year	2026	\$ 850,000	procurement & construction

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

Project Name	REGIONAL FLOW MANAGEMENT STRATEGY						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-11
Location	Allentown			Prj. Type	AO	Prj. Funding	Allentown
Prj. Category	Primary	Regulatory	Secondary	CA/OS	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
<input type="checkbox"/> Scheduled Replacement	<input checked="" type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	40	Project inception date	2019
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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
The I&I Improvements include the following: Year 1 (2020) consists of a lining project for a 30" sewer section along MLK Drive; Year 2 (2021), Year 3 (2022), Year 4 (2023), and Year 5 (2024) all consist of a combination of heavy cleaning, grouting, lining point repairs, excavating point repairs, and pipe lining.

Project Drivers and Needs to be Met by the Project
The primary project driver is regulatory. This project is a component of the work that will be necessary to comply with the submitted Regional Flow Management Strategy (RFMS) in accordance with DEP, which is focused on reducing inflow and infiltration into the wastewater collection system.

Project Status - Describe what work, if any has been completed or underway for this project
The City's I&I Source Reduction Plan was submitted to the EPA in 2018. DEP is now in control of overseeing the RFMS implementation. Year 1 was completed in 2020 and Year 2 construction will commence in Q2 2021.

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
Annual cost impact to be determined as needed. The project is funded by the City.

Project No.	AD-S-11
Project Name	REGIONAL FLOW MANAGEMENT STRATEGY

Prior Project Cost	\$ 665,960
Estimated Project Costs:	2022-2026
LCA Staff	\$ 40,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,140,000
Professional Services	\$ 225,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 3,080,960

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

Requested in this Capital Program	\$ 1,640,000
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		Need	Phase of Work
2021 Budget		\$ 775,000	Construction
1st Year	2022	\$ 465,000	Construction
2nd Year	2023	\$ 340,000	Construction
3rd Year	2024	\$ 835,000	Construction
4th Year	2025	\$ -	
5th Year	2026	\$ -	

(1) This is an Administrative Order (AO) Project that will be funded by the City of Allentown.
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**LEHIGH COUNTY AUTHORITY
ALLENTOWN DIVISION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	FLOW CHARACTERIZATION STUDY						
Budget Area	Wastewater	Department	Capital Works	Date	1/12/2021	Project No.	AD-S-12
Location	Allentown			Prj. Type	AO	Prj. Funding	Allentown
Prj. Category	Primary	Regulatory	Secondary	CA/OS	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
<input type="checkbox"/> Scheduled Replacement	<input checked="" type="checkbox"/> Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information			
Expected Useful Life (Years)	40	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	N/A		

*All customers of the City of Allentown, City signatories and Western Lehigh signatories.

Detailed Project Description
The Flow Characterization Study (FCS) include the following: Year 1 (2021) consists of 65 temporary meters, 24 permanent sewer billing meters, and 11 permanent/non sewer billings. Year 1 also consists of QA/QC of the meter data and initial development of the Regional KISS sewer model; Year 2 (2022) consists of finalizing the development of the Regional KISS sewer model and beginning scenario planning and alternative analyses; Year 3 (2023) consists of additional 537 scenario planning and alternative analyses as needed.

Project Drivers and Needs to be Met by the Project
The primary project driver is regulatory. This project is a component of the work that will be necessary to comply with the submitted (August 2018) Regional Flow Management Strategy (RFMS) in accordance with DEP, which is focused on reducing inflow and infiltration into the wastewater collection system. This project is also a component of the Interim Act 537 Plan submitted to DEP in September 2020.

Project Status - Describe what work, if any has been completed or underway for this project
The Interim Act 537 Plan was submitted to DEP on 9/4/20. As part of the Interim Plan, the KISS Region committed to performing a flow characterization study (FCS) in 2021. The FCS is underway as of early January 2021 and will conclude by late 2021. The remainder of the work includes model development in late 2021 through 2022. After the model is calibrated in 2022, specific models run will be needed to determine a 537 solution that meets the needs of the Region.

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
Annual cost impact to be determined as needed. The project is funded by the City.

Project No.	AD-S-12
Project Name	FLOW CHARACTERIZATION STUDY

Prior Project Cost	\$ -
Estimated Project Costs:	2022-2026
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 1,990,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 2,100,000

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

Requested in this Capital Program	\$ 850,000
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		Need	Phase of Work
2021 Budget		\$ 1,250,000	Temporary meters and QA/QC of data; begin model development
1st Year	2022	\$ 500,000	Finish model development and start of 537 alternative analyses
2nd Year	2023	\$ 150,000	Finish 537 alternative analyses; start 537 solution selection
3rd Year	2024	\$ 100,000	Finish 537 solution selection; begin writing 537 Plan
4th Year	2025	\$ 100,000	Submit 537 Plan
5th Year	2026	\$ -	

(1) This is an Administrative Order (AO) Project that will be funded by the City of Allentown.

FINANCE & ADMINISTRATION

ACTION ITEM

DISCUSSION ITEMS

1. Allentown Division 2022-2026 Capital Plan – March 8, 2021

Distribution of draft AD 2022-2026 Capital Plan and presentation of plan highlights and summary.

2. LCA Strategic Plan – March 22, 2021

Following receipt of consultant proposals, due on March 1, LCA staff and the Board Strategic Planning Subcommittee expect to review and recommend award of a professional services authorization to the selected firm at the March 22, 2021 Board meeting.

INFORMATION ITEMS

1. Recently Purchased Investments – Certificates of Deposit (CDs)

CERTIFICATES OF DEPOSIT						
25-Feb-21						
Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
WW Capac	Eaglemark Savings Bank	Carson City, NV	249,000.00	1/20/21	1/20/23	0.100
WW Capac	Bank United, National Association	Miami Lakes, FL	249,000.00	1/22/21	1/23/23	0.100
WW Capac	BMW Bank Of North America	Salt Lake City, Ut	249,000.00	1/22/21	1/23/23	0.100
WW Capac	John Marshall Bank	Reston, VA	249,000.00	1/28/21	1/27/23	0.100
LLRI CR	Enerbank USA	Salt Lake City, Ut	245,000.00	1/29/21	1/30/23	0.100
LLRI CR	Marlin Business Bank	Salt Lake City, Ut	245,000.00	1/29/21	1/30/23	0.100
LLRI CR	United Fidelity Bank FSB	Evansville, IN	125,000.00	2/5/21	2/6/23	0.100

Cons Wtr (2)

Consolidated Water (2)

LLRI CR

Little Lehigh Relief Interceptor Capital Reserves

Cons LL2 (314)

Consolidated Little Lehigh Relief Interceptor 2

WW Capac

Wastewater Capacity

2010 Wtr Cons A

2010 Water Construction, Series A Bond

Wtr R&R

Renewal and Replacement

2. Developments

Water system construction is occurring in the following developments:

8323/8449 Congdon Hill Drive, 2 industrial lots with warehouses, LMT

8615/8783 Congdon Hill Drive, 2 industrial lots with warehouses, LMT

Fields at Indian Creek, Phases 4 & 5, 86 residential units (sfd), water and sewer, UMiIT & Emmaus

Kohler Tract, 123 residential lots (sfa), water and sewer, UMiIT

Water system plans are being reviewed for the following developments:

749 Route 100, 1 industrial lot with warehouse, UMT

1047 Cetronia Road, 8 unit apartment building, UMT
5329-5347-5357 Hamilton Blvd., 1 commercial lot, LMT
5420 Crackersport Road, 1 commercial lot, UMT
ABE Doors & Windows Redevelopment, 1 commercial lot, LMT - NEW
ATAS International, 1 industrial lot, UMT
Estates at Maple Ridge, 30 residential units (sfd), UMiIT
Hidden Meadows, Phase 2, 86 townhouse units (sfa), UMT
Laurel Field, Phase 5, 25 townhouses, UMT
Lehigh Hills, Lot 5 Phase 2, 240 residential units (sfd.), UMT
Lehigh Hills Townhouses, 24 townhouse units (sfa), UMT
Madison Village at Penn's View, 66 manufactured homes, 1 lot, water and sewer, LynnT
Mountain View Estates, 27 residential units (sfd), LMT
Parkland Crossing (formerly 1224 Weilers Rd Twins), 144 townhouse units, UMT
Ridings at Parkland – Phase 2, 38 residential units (sfd), NWT
Schoeneck Road, Lot 1, 1 lot warehouse, LMT
Sheetz – Cetronia Road, 1 commercial lot, UMT - NEW
Shepherds Corner, 1 commercial lot, LMT
The Annex at Fields at Indian Creek, 22 S.F. residential units, Emmaus Borough
Towneplace Suites by Marriott, 91-room hotel, UMT
West Hills Business Center-Bldg H – 1 Commercial Lot, Weisenberg T

Sewage Planning Modules Reviewed in Prior Month:

Cetronia Sheetz Store, UMT, 2,580 gpd.
LANTA Para Transit Facility, Allentown, 3,184 gpd.
Yourway Facility Expansion, UMT, 4,125 gpd.
Heeps Meats, UMT, 17,000 gpd.

WATER**ACTION ITEM**

DISCUSSION ITEMS

INFORMATION ITEMS

1. Allentown Division – Water Main Replacement Program Cycle 5

The project is for the annual replacement of aged and/or failing cast iron water main in multiple locations throughout the City, in accordance with the new amended lease requirements (one mile per year), based on the design engineer's risk prioritization protocol. The design engineer (Gannett Fleming) halted work on Cycle 5 following City Compliance office acceptance of the Cycle 5 main replacement prioritization, pending available funding. Capital Works has re-started Cycle 5 design phase for construction in 2021 of a water main replacement project. As of November 2020, LCA is in the process of negotiations for cost sharing with the City for road surface restoration. As of December 22, 2020 LCA has submitted the substantially complete plans and specifications to the City for approval with a mandatory scheduled comment meeting set for January 19, 2021. It is anticipated that this project will be out to bid by the end of February 2021 and seeking board approval in early April 2021.

2. Allentown Division – Water Filtration Plant: SCADA System Replacement

The project consists of the replacement of the existing SCADA System at the Water Filtration Plant. The purchase and installation of new servers, new control panel cabinets, new cabling, and new programming software will encompass this project. Board approval to purchase this equipment was granted at the August 27, 2018 Board Meeting. Replacement will be completed by early 2020. Construction is 99% complete. This project will be funded by LCA Allentown Division. Majority of hardware in place and running. Working through reporting and data collection items. Project is complete.

3. Allentown Division – Water Filtration Plant: High Lift Pump VFD Replacements

The Water Filtration Plant (WFP) supplies water to residential and commercial customers in the City of Allentown, as well as wholesale water to surrounding communities. One of the critical elements at the WFP is the High Service Pumping System (HSPS), which is the primary means of conveying treated water into the distribution system. The HSPS has experienced regular failures from aging electrical components. The July 2017 Allentown Water Master Plan categorizes the pump variable frequency drives (VFDs) in very poor condition and notes that the VFDs are no longer supported by the manufacturer. This project will replace two of the existing VFDs and add a third VFD to the constant speed pump. Board approval was granted at the 8/12/19 Meeting for the design phase of this project, and the design was substantially completed in 2020. The design engineer also completed an "Arc-Flash" study in 2020 to identify related electrical deficiencies at the WTP. Final design engineering work was resumed in September 2020 following execution of the amended Lease Agreement with the City. Capital Works met with a representative of PennVEST on 9/18/20 to discuss an upcoming application submission and final design completion schedule. Final design was completed in November 2020. Capital Works' submitted the funding application and supporting documentation to PennVEST by the 11/4/20 application submission deadline for the 1/20/21 PennVEST meeting. The application for funding was approved at the 1/20/21 PennVEST meeting, and the construction bids will be opened on 3/8/21. Following the opening of bids, the PennVEST settlement paperwork will be drawn up for submission to PennVEST.

4. Suburban Division – Upper Milford-CLD Interconnection Project (Kohler Tract)

The project features the installation of a new booster pumping station and water main extension to interconnect the Central Lehigh Division (CLD) with the Upper Milford Division (UMD) allowing the abandonment of the UMD water supply facilities, and to provide water service to the proposed 123-lot Kohler Tract subdivision in Upper Milford Township. Costs are being shared between the LCA Suburban Division and the developer of the Kohler Tract (Jasper Ridge). Pumping station bids were opened on 4/25/19. Board approval for the construction phase of the project was granted at the 5/13/19 meeting and a preconstruction meeting was held on 6/25/19. The NPDES permit was issued on 3/9/20 and a premobilization teleconference was held on 3/19/20. Upper Milford Township has issued building permits. Construction is more than 96% complete. The contractors are addressing the remaining punch list items. The station went on-line on November 19th.

5. **Suburban Division – Watershed Monitoring Program**

The project will include setting up a surface water flow-monitoring network for the Little Lehigh Creek. The work is in response to the Watershed Monitoring Plan that was developed and reported to LCA by Al Guiseppe (SSM, Inc.) in 2017. In 2018, USGS selected the Delaware River Basin to pilot the National Next Generation Integrated Water Observing System (NGWOS). The Little Lehigh Watershed was picked as a targeted area of the NGWOS Project and additional surface water and ground water monitoring stations will be developed. USGS and LCA met on 11/19/2019 to discuss the proposed monitoring stations and the program in general. A follow up meeting was held on 12/16/2019. USGS and LCA have now found all three GW monitoring wells, LE860, LE 861 and LE862, who's usage had all been discontinued decades ago and their locations were presently unknown. USGS is now checking the viability of using them again. USGS has now completed the installation of (4) new surface water (SW) Gauging Stations in the Little Lehigh Watershed and all are collecting data. Two additional SW stations need to be relocated because of the intermittent streams they were originally planned to monitor. Additional ground water (GW) flow monitoring stations are in the planning stages. All six (6) Fybr sites are currently collecting flow data and the calibration process is expected to last several months. Four (4) out of eight (8) planned weather stations are currently operational and are recording data. **(No Change)**

6. **Suburban Division – Buss Acres Pump Station Replacement Construction**

The project consists of the consolidation and replacement of two well stations with a single new pump station and a new water storage tank to replace two antiquated hydropneumatic pump stations. The new station will be a variable frequency drive controlled double pumping system with full SCADA control. The design will include radon reduction elements and also accommodate the future installation of additional radon removal equipment, to be implemented upon DEP's mandate of a regulatory limit. The project is in construction phase. The Notice to Proceed was issued to the contractors on 9/24/19. Construction began in February 2020 and is approximately **75%** complete. Equipment delivery delays from the pre-cast building manufacturer have slowed the progress of this project.

7. **Suburban Division – Water Meter Reading Equipment Upgrade**

LCA's capital program includes the replacement of 20,000 transceiver units, and 10,000 units will be replaced 2019 with the remaining to be replaced in 2020 under separate authorization. The new units have a 20-year battery life and are compatible with the new meter reading software purchased in 2017. This project will replace 100% of the remaining old style radio units over a two-year period. Construction phase services for the first round of 10,000 units was approved at the 5/13/19 Board meeting. Construction began in July 2019 and a change order was issued to the contractor for the installation of the remaining transceiver units that were originally scheduled for replacement in 2020, in order to expedite the completion of the work under the program and take advantage of favorable contract unit pricing. The project is substantially complete. The

contractor will return to complete additional radio replacements in pits as soon as the weather allows for locating and accessing the pits.

8. **Suburban Division - Additional (Redundant) Water Supply - Small Satellite Divisions**

This Project focuses on the development of an additional well for the Madison Park North (MPN) system per DEP guidelines to have a backup source of water supply. An agreement is in place with an adjoining property owner to MPN to drill a test well on their property. The “step drawdown test” was performed on 3/26/19 and indicated that the test well is a viable backup source to Well 1. A Pre-Drilling and Aquifer Test Plan was approved by DEP in late September of 2019. Authorization was granted at the June 22 Board meeting for aquifer testing of the proposed well as per the combined Pre-Drilling and Aquifer Test Plan. Well testing was performed in August in coordination with LCA’s engineer. Testing was halted upon discovery of a water bearing zone blocked by casing pipe grouting. A second test well location has been identified on the same property and well drilling has been completed with positive results. Test Well 2 is more productive than the existing source for the system (Well 1). A sustained pump test of Well 2 will be completed as soon as hydrogeologic conditions are favorable, with DEP permitting to follow. **(No Change)**

9. **Arcadia West Division – Water Storage Tank Replacement**

The Arcadia West water storage tank has had several leaks in recent years and the coating has reached the end of its useful life. This project is for the replacement of the tank with a new concrete reservoir. Design phase authorization was awarded to Entech Engineering at the April 27, 2020 Board meeting. This project will be funded by the LCA Suburban Division. Design is underway and expected to be completed and ready for bid in the first quarter of 2021. The DEP Public Water Supply Permit has been secured. The project will go out for bid in March and bids will be received in April.

10. **Allentown Division – 36" DI Water Main Condition Assessment**

Water distribution system consultant Gannett Fleming, Inc is working with Pure Technologies to develop a condition assessment project focusing on the 36" ductile iron transmission line that feeds the north end of Allentown and Huckleberry Ridge Reservoir. This line has had two recent major failures and it would be beneficial to determine if there is a root cause for these failures that can be corrected to prevent further damage and water loss. The work was performed on December 14-15, 2020. A full report will be available within a few weeks, hopefully late March or early April. **(No Change)**

11. **Suburban Division – Fixed Base Meter Reading Stations**

The project focuses on securing land development and zoning approvals to construct eight fixed base water meter reading stations located throughout the Suburban Division water service area. The land development and zoning approvals will allow for the future construction of the stations as part a program to transition to a centralized advanced metering infrastructure system which will provide more consistent, timely and accurate billing to the customers. Approval of a consulting engineer to provide the site development engineering services will be requested at the April 12, 2021 Board meeting.

WASTEWATER

ACTION ITEM

1. **Suburban Division – Park Pump Station Phase 2 Upgrade: Design Authorization – March 22, 2021**

The Park Pump Station Phase 1 Upgrade was completed in early 2020, and consisted of new pumps, new pump control center with variable frequency drives, new automatic transfer switch, new wet well level control system, upgraded HVAC system, roof replacement, new pump removal access hatch, new pump hoist system, and associated mechanical and instrumentation equipment. The existing generator does not have the capacity to handle the full loads of the upgraded station at 100% design flow and is at the end of its useful life. The Phase 2 Upgrade project consists of replacement of the original station backup generator system. The designer of record for the Phase 1 Upgrade was Whitman, Requardt & Associates, LLP (WRA). As WRA is already very familiar with the power systems and controls at the station, Capital Works requested a design phase proposal from the firm for the Phase 2 project. Authorization of design phase is to be requested at the March 22, 2021 Board meeting.

2. **Allentown Division – Sanitary Sewer Collection System: I&I Source Reduction Program Plan (Year 2) - March 22, 2021**

This project includes the design of the City of Allentown's I&I Source Reduction Program Plan. In 2014, Video Pipe Services complete various CCTV inspections throughout twenty Primary and Secondary Basins. All pipe segments that called for complete pipe replacement have already been repaired. The remaining source reduction activities within the twenty Basins have been organized into a 5-Year Plan, with each year focusing on a different geographic region of the City's sewer collection system. Design has been approved for all five years, with the first project completed in 2020 and the last project finishing in 2024. The Year 2 bids are due on March 3, 2021 and Board approval for construction phase is being requested at the March 22, 2021 Meeting. This project is considered an AO expense under terms of the Lease and is City funded.

DISCUSSION ITEMS

INFORMATION ITEMS

1. **Allentown Division – Kline's Island WWTP: Phase 1 AO Design Improvements**

This project includes the design of the AO improvements at the wastewater treatment plant. This conceptual design concept was approved by the City and the relevant final deliverables were received by LCA. The City then directed LCA to proceed with the final design of improvements related to the blending alternative. Board approval for the Professional Services Authorization with Kleinfelder East, Inc. was granted at the September 11, 2017 Board Meeting. The project is identified as Administrative Order Work and will be funded by the City. The 30% design drawings and specifications have been received. The City directed to "pause" the design phase of the project. The City has now directed LCA to keep this project on indefinite hold. **(No Change)**

2. **Allentown Division – Kline's Island WWTP: Max Monthly Flow Capacity Evaluation**

DEP has noted that the KIWWTP has been performing at a high level and meeting its permitted effluent quality limits during a period of prolonged wet weather since early 2018. This study will provide the basis for confirming the plant's maximum monthly average that can be sustained during prolonged periods of wet weather – while remaining in full compliance with effluent quality requirements of the plant's permit. Approval of the study was granted at the 8/26/19 Board Meeting. The study was completed in mid-October 2019 and a Part II Permit was sent to DEP on 10/18/19. The permit was resubmitted in late January 2021 (without formal action yet taken by

DEP on the Interim Act 537 Plan - submitted in September 2020). This project is considered an AO expense under terms of the Lease and is City funded. **(No Change)**

3. **Allentown Division – Lehigh Street (Rte. 145) Water and Sewer Main Relocation Project**

As part of the Pennsylvania Rapid Bridge Replacement Program, the proposed replacement of the Lehigh Street Bridge near the intersection with MLK Boulevard has required the relocation of existing City water and sewer lines that are located within the PennDOT right of way. Because the bridge is owned by Lehigh County and not the Commonwealth, the normal PennDOT relocation reimbursement schedules do not apply. Therefore, the County and LCA have executed an agreement on cost reimbursement on similar terms. LCA's engineer is working on behalf of LCA on a final sewer relocation design that minimizes the extent of the relocation. There will be less water infrastructure relocation work required since the existing water main is attached under the bridge and will be reattached after the new bridge is constructed. Construction will commence in 2021. **(No Change)**

4. **Kline's Island Sewer System – Regional Sewer Capacity & Wet-Weather Planning – Interim Act 537 Plan Preparation**

Following several months of discussion with the Pennsylvania Department of Environmental Protection (PA-DEP), all municipalities flowing into the Kline's Island Wastewater Treatment Plan have agreed to complete an Interim Act 537 Plan ("Interim Plan") by September 2020. This Interim Plan will primarily consist of projecting new connections to the regional sewer system from 2021 through 2025 and outlining steps to be taken during this timeframe to prepare a full Regional (Long-Term) Act 537 Plan ("Regional Plan"). This two-step planning process has been developed to allow all municipalities to work cooperatively toward a Regional Plan to meet future sewer capacity needs of the region, and to provide proper regulatory oversight and control of new connections to the system while the Interim Plan is in force from 2021 to 2025. To begin the process of compiling the Interim Plan, a consulting engineer has been preliminarily retained, and approval of their full Professional Service proposal was granted at the February 10, 2020 Board meeting. Costs associated with the development of the Interim Plan will be paid by the City of Allentown and reimbursed through existing intermunicipal agreements and by City customers through the use of the Administrative Order Fee. As of late August 2020, the Interim 537 Draft is 100% completed and was delivered to sixteen planning commissions on 3/16/2020. Planning commission meetings occurred with public advertisement opening on 6/10/20 and closing on 7/10/20. Municipal resolution adoptions occurred in August and the Plan was delivered to DEP on 9/4/20. In late January 2021, DEP requested an additional 60 days to review the Interim Act 537. The KISS Region is proceeding on schedule with its commitments as outlined in the Plan.

5. **Kline's Island Sewer System – Regional Sewer Capacity & Wet-Weather Planning – Sewage Billing Meter QA/QC Data Analytics and 2021 Flow Metering Preparation**

As part of the Interim Act 537 Plan, the municipalities served by the Kline's Island Sewer System have committed to completing a flow metering and modeling project beginning in 2021. The flow metering data will be used to prepare modeling and identify the capital improvements needed to meet the future sewage capacity needs of the region through 2050. The flow metering will include a mix of temporary meters and the existing sewage billing meters. Data delivery and storage procedures, quality assurance, and flow analytics were implemented in 2020 for these sewage billing meters. Without this meter development program, the data cannot be used from these billing meters. A consulting engineer's professional service proposal was granted at the April 27, 2020 Board meeting. Costs associated with the development of the QA/QC data analytics and the 2021 flow metering preparation will be paid by the City of Allentown and reimbursed through existing intermunicipal agreements and by City customers through the use of the Administrative Order Fee. As of late February 2021, the flow metering program will utilize 24 sewer billing meters.

6. Regional Act 537 Plan Alternatives Analysis: Pretreatment Plant Upgrade Option

To begin the process of developing the long-term Regional Act 537 Plan, the evaluation of the LCA Pretreatment Plant Alternatives was identified as an immediate need to assist with completing the full alternatives analysis to be completed within the next five years. The alternative to upgrade the Pretreatment Plant to full treatment was previously evaluated in the 2011-2016 timeframe. Additional study is required to fully evaluate the facility's capacity to treat current and future dry-day, wet-weather, and peak flows. To complete this evaluation, LCA staff has received proposals for two engineering firms that will serve in Program Manager and Technical Lead roles. The Program Manager will oversee all alternatives being evaluated at both the Pretreatment Plant and Kline's Island Wastewater Treatment Plant in Allentown as the Act 537 Plan is being developed. The Technical Lead will provide specific engineering and treatment plant modeling services to support evaluation of the Pretreatment Plant alternatives. Board approval for these professional services authorizations was granted at the 8/24/2020 meeting. Final reports are expected by June 2021. **(No change)**

7. Suburban Division – Western Lehigh Service Area: 2020 Flow Metering Program

Future flow metering work is anticipated over the next several years for both the Western Lehigh service area as well as the entire regional Kline's Island Sewer System. In 2020, the Western Lehigh group will conduct flow metering for a period of eight months to gather additional data on inflow and infiltration and the impact of prior rehabilitation work. It is anticipated that more extensive flow metering will be required in 2021 and 2022 to develop a Regional Plan. Approval of a Professional Services Authorization and three-year contract with Flow Assessment Services was granted at the February 10, 2020 Board meeting. On February 10, 2020, the Board approved a Professional Services Authorization for Arcadis to provide quality assurance and data analysis services for the 2020 flow monitoring program. As of late February 2021, data collection is 100% completed and the Rain Derived I&I (RDII) analysis is underway.

8. Suburban Division – Western Lehigh Service Area: 2020 Sewer Modeling

The Western Lehigh Sewer Partnership (WLSP) hydraulic model has been calibrated using 2019 flow meter and rainfall data and is available to support long-term Act 537 planning for the Western Lehigh Interceptor (WLI). Five separate modeling tasks will be performed in order to facilitate broader Kline's Island Sewer System (KISS) planning need discussions. The results of this 2020 modeling will help to inform further future modeling decisions and alternative analyses that will occur during the full KISS model calibration period in 2022. A consulting engineer has been retained and full authorization was granted at the 5/11/2020 Board meeting. A presentation was presented to the Board at the 8/10/20 Board Meeting. Various modeling alternatives are still ongoing and the full model results will be available by the second quarter of 2021. The project is funded by the LCA Suburban Division.

9. Suburban Division – Park Pump Station Force Main Rehabilitation

The Park Pump Station and Force Main line were constructed in 1980 to provide wet weather relief to the Little Lehigh Creek Interceptor, which conveys wastewater from ten municipalities from outlying areas to the Kline's Island Wastewater Treatment Plant (KIWWTP). The force main consists of 8,715 linear feet of prestressed concrete cylinder pipe (PCCP) of various sizes (2,615' of 24"; 2,695' of 30"; and 3,405' of 36"), and connects with the 54" sanitary sewer interceptor that runs to KIWWTP. PCCP is particularly sensitive to deterioration due to hydrogen sulfide gas from wastewater, and corrosion of exposed reinforcing steel can result in structural degradation and pipe failure. An internal investigation of the pipe is required to assess the condition of the PCCP pipe and identify damage areas, in order to determine the locations and extent of rehabilitation needed to restore the level of service, prolong service life, and mitigate the risk of failure. LCA will conduct a limited manned inspection (tentatively Q2 of 2021) of the force main pipe at 5 air release valve (ARV) locations, 100 feet in both directions from the

ARV manhole, which will be used as the initial evaluation of the representative condition of the pipe. Three, one-day trial runs (on a Saturday) were completed in Q4 of 2020 to verify the amount of time available to keep Park Pump Station offline. The pump station must be inactive in order to perform the investigations. Tentative work dates for the full scale evaluation is April 10-11, 2021. **(No change)**

10. Suburban Division – Wynnewood WWTP Upgrade Project

Wynnewood Terrace WWTP was constructed in 1980 by the developer to serve the Wynnewood Terrace subdivision, located in the Laury's Station area in North Whitehall Township. Sewer service is provided to approximately 217 residential and 2 commercial properties. LCA acquired the system in 2003. The plant, while meeting effluent limits, has reached the end of its useful life with respect to corroded structural steel tanks and outdated mechanical equipment and is to be replaced with this project. The new facility shall meet the effluent limits criteria established in the DEP and DRBC permits, including new or additional limits that may be imposed during the permitting process. Design phase was authorized in February 2017 and was concluded in late Summer 2018. The DEP Part 2 Water Quality Management Permit was received in March 2018. The project was advertised for bid in August 2018, bids were opened in September 2018, and bids were authorized for award at the October 22, 2018 Board meeting. Construction work mobilized in early 2019 and was substantially completed in October 2020, with testing, start-up and training tasks completed. Construction is approximately 99% complete as of November 2020. Outstanding work consists of final restoration and demolition of the existing plant. **(No Change)**

11. Suburban Division - Lynn Township Corrective Action Plan

Excessive inflow and infiltration (I&I) and high wet-weather flows into the Lynn Township sewer system has been ongoing and increasingly challenging to address. As noted in LCA's monthly operations reports, treatment plant bypasses and sanitary sewer overflows have occurred in this system and must be addressed. On 6/4/19 a meeting was held with DEP, Lynn Township and LCA representatives as a result of a hydraulic overload at the wastewater treatment plant, based on 2018 Chapter 94 Report monthly plant flows. At the meeting, DEP directed LCA to submit an amendment to the pre-existing Corrective Action Plan (originally submitted by Lynn Township Sewer Authority) to include an updated system condition assessment and an outline of steps to be taken to mitigate I/I flows and maintain NPDES permit compliance. The Corrective Action Plan (CAP) includes structural and non-structural initiatives and involves coordination with the host municipality. The framework for the CAP was shared with the Board in February 2019. A meeting was held at Lynn Township with DEP in June 2019 to discuss the Lynn Township CAP and Township sewer planning/growth issues, and DEP directed LCA to submit a CAP Amendment by the end of summer 2019. The CAP Amendment contained an updated sewer system condition assessment and a corrective plan to further mitigate I/I flows. Updated CCTV work of the entire system was substantially completed in August 2019, and the inspection data was summarized in the CAP Amendment and is being used to scope a capital repair project. The Lynn Township Board of Supervisors adopted a sewer system rules and regulations ordinance on 9/12/19, which gives LCA the authority to inspect private laterals and facilities for illegal connections and perform follow-up enforcement. A meeting with DEP and Lynn Township representatives was held on 1/15/20 to discuss the CAP Amendment and plan moving forward. DEP sent a letter to LCA dated 6/8/20 granting 55 EDUs of sewer allocation relief for new connections to the system. **(No Change)**

12. Suburban Division - Heidelberg Heights Corrective Action Plan

On 2/11/19, DEP submitted a notice of violation to LCA regarding bypasses and permit exceedances at the Heidelberg Heights wastewater treatment plant. As discussed with the LCA Board during several meetings in 2018, this small satellite system has been challenged

by high groundwater levels and significant infiltration and inflow (I&I) of clear water into the sewer system during rain events. LCA staff met with DEP officials on March 6, 2019 to discuss the problems and, as a result, LCA prepared a comprehensive Corrective Action Plan (CAP) and submitted DEP on 5/5/19. A draft of the plan was attached for Board review at the 4/22/19 Board meeting. The final CAP was submitted to DEP on 4/29/19. The Heidelberg Heights Board of Supervisors approved the advertisement for adoption of a sewer system rules and regulations ordinance on 9/19/19, which gives LCA the authority to inspect private laterals and facilities for illegal connections and perform follow-up enforcement. The ordinance was adopted by the township the in October 2019. A Consent Order & Agreement (CO&A) was drafted by DEP and sent to LCA in May 2020, which incorporates the projects and schedule outlined in LCA's proposed CAP. The final CAP was adopted by resolution by the LCA board at the 6/22/20 meeting. **(No Change)**

13. Suburban Division – Sand Spring WWTP Upgrade Project Construction

The Sand Spring WWTP was constructed in 1972 by the developer to serve the Sand Spring development, located in the Schnecksville area in North Whitehall Township. Sewer service is provided to approximately 248 apartment units, 8 commercial properties, and an elementary school. Lehigh County Authority (LCA) acquired the system in 2005.

The plant, while meeting effluent limits, has reached the end of its useful life. The plant is constructed of in-ground steel tanks that are in poor condition, with areas of corrosion and loss of structural integrity. The mechanical and electrical systems are also at the end of their service life and in need of replacement. The proposed project includes replacement of the existing treatment facility in entirety with new technology and concrete tanks appropriate for the wastewater flows and loading characteristics. The new facility shall meet the effluent limits criteria established in the respective DEP and DRBC permits, including new or additional limits that may be imposed during the permitting process. Design phase was authorized in February 2017 and final design was delayed due to DEP Part 2 Water Quality Management and NPDES permitting issues. DEP approval of the Water Quality Management Permit was received in late December 2018, the design was finalized in late Spring 2019, and the project was advertised for bid in July 2019. Bids were opened on 8/13/19 and construction phase authorization was approved at the 8/26/19 Board meeting. A pre-construction meeting was held on 11/1/19 following execution of contract documents. Conditional Use approval and land development waiver were granted by North Whitehall Township in Spring 2020. Construction mobilization for site work occurred in late winter 2020 and construction is proceeding. Substantial completion and start-up of the new facility is anticipated for early 2021. **(No Change)**

14. Suburban Division - Trexlertown Area Capacity Solution Alternative

As part of the Western Lehigh service area's Sewer Capacity Assurance & Rehabilitation Program (SCARP), a conveyance capacity "bottleneck" was identified in the Trexlertown area of the Western Lehigh Interceptor, and this area was assigned a high priority due to occurrence of sanitary sewer overflows and basement backups in the vicinity. A parallel interceptor was originally conceived to run approximately from Cetronia Rd to Spring Creek Rd. The concept was modified to focus on providing storage capacity in the system for this area, due to concerns about downstream hydraulic impacts. This project is an interim solution to address local impacts of the system bottleneck, and will become part of the future long-term solution to alleviate regional conveyance capacity challenges. A pre-design feasibility study is being performed to evaluate various engineering alternatives, including an "in-line" parallel storage tank, conventional concrete tank (flow equalization basin), or other options. Award of the pre-design feasibility study to HDR was authorized at the 10/21/2019 Board meeting. The study is proceeding based on modeling information provided to date from Arcadis and a draft report is expected in early March 2021.

15. Suburban Division – Lynn Township Manhole Rehabilitation Project

This project involves the rehabilitation of manholes in the Lynn Township service area found to be structurally deficient &/or leaking. The project includes frame and cover replacement, interior pipe connection grouting, exterior concrete work and sealing of manholes, and sealing around manhole frames located within roadway surfaces that are found experiencing infiltration through the frame and cover. The purpose of the project is to eliminate inflow and infiltration into manholes in the system. The project scope includes approximately 185 manholes will be rehabilitated in 2020. The project was advertised for bid in early June 2020, bids were opened on 6/26/20, and construction phase authorization was approved at the 7/13/20 LCA board meeting. Construction will be completed by early 2021. **(No Change)**

16. Suburban Division - Heidelberg Heights 2020 Sanitary Sewer Replacement Project

In accordance with the adopted, executed Corrective Action Plan mandated by DEP, LCA is required to complete annual I/I mitigation projects to eliminate hydraulic overloads and bypass events at the Heidelberg Heights wastewater treatment plant. The Order requires that all original vitrified clay sewer main and lateral pipe be replaced within the next 5 years. This project was originally advertised for bid in March 2020 and bids were opened on 3/24/20. The low bid price exceeded this capital project construction budget for 2020, and the LCA board authorized rejection of bids at the 4/13/20 board meeting. The project scope was modified to reduce cost and the project was re-advertised for bid in June 2020, bids were opened on 7/13/20, and board authorization of construction phase was approved at the 7/27/20 LCA board meeting. Construction will be substantially completed by early 2021. **(No Change)**

17. Suburban Division – Western Lehigh Manhole Rehabilitation Project – Phase 2

This project involves the rehabilitation of key manholes in the Western Lehigh Interceptor service area. The project includes flood-proofing, interior pipe connection grouting, exterior concrete work and sealing of manholes, particularly those manholes in close proximity to the floodway, which experience floodwater inundation. The purpose of the project is to eliminate floodwater inflow into the system. The project scope for Phase 1 included 50 manholes that were rehabilitated in 2020 as part of a phased manhole rehabilitation program. The project was advertised for bid in April 2020, bids were opened on 5/12/20, and construction phase authorization was approved at the 6/8/20 board meeting. As of early 2021, construction was been completed and the Phase 1 project was closed out. Phase 2 of the WLI Manhole Rehabilitation Project, which includes manholes moving downstream in the WLI drainage basin, is in design phase at this time and is anticipate to be bid in late Spring 2021.

18. Allentown Division – Kline's Island WWTP: Sodium Hypochlorite System Installation Project – Construction Phase Approval

This project involves the replacement of the existing gaseous chlorination system at the Kline's Island Wastewater Treatment Plant (KIWWTP). The use of gaseous chlorine for effluent disinfection, while reliable, is outdated and creates significant public health and employee safety risks. In addition, the existing equipment has reached the end of its useful life. The 2018 KIWWTP Master Plan recommended abandoning gaseous chlorine and switching to (liquid) sodium hypochlorite. The design commenced in March of 2019 and was completed in early 2020. The project was advertised for bid in February 2020 and bids were opened on 4/14/20. Construction phase was authorized at the 6/8/2020 Board meeting and the contractor mobilized in late summer 2020. The project is anticipated to be completed in the first quarter of 2021. The project will be funded by the LCA Allentown Division. **(No Change)**

19. Suburban Division – Western Lehigh Service Area: Revenue Planning Tool

As part of the long-term Act 537 planning process, a revenue planning tool is required to help predict the impact of proposed system modifications in the Western Lehigh Service Area. This tool will simulate financial impacts based on current and future flows and loads and utilizing the terms of existing inter-municipal agreements. For the alternatives being evaluated by LCA's engineering consultants for potential upgrade of the Pretreatment Plant to full treatment, the revenue planning tool will simulate changes in future flows and loads and general financial analyses to assist with decision-making regarding these alternatives. Prior phases of this work were completed in 2019 and 2020 to review the assumptions and parameters required to develop the financial model. Authorization for Phase 2 (development of the actual revenue planning tool) was approved at the 12/14/2020 Board Meeting. Final tool delivery is expected before June 2021.

20. Kline's Island Sewer System – Regional Sewer Capacity & Wet-Weather Planning: 2021 Model Expansion and Calibration

The prior KISS sewer model from 2014 included only the City of Allentown and LCA/Western Lehigh municipalities. The primary goal of this work is to expand the sanitary sewer model into the surrounding Signatories (Coplay, Whitehall, North Whitehall, Hanover, South Whitehall, Salisbury, and Emmaus). Calibration of this expanded model to current flow characteristics will aid in the identification and evaluation of regional alternatives for solutions to both treatment and conveyance through the year 2050 Act 537 planning horizon (the LCA/Western Leigh portion of this model calibration work was completed in 2019 and 2020). The end result of this proposed work will provide one comprehensive, calibrated sewer model for the entire KISS system using 2021 temporary meter flow data and rainfall data. On February 22, 2021, Board approval was granted for this next phase of Act 537 planning efforts.

21. Allentown Division – Sanitary Sewer Collection System: Rain Derived Inflow and Infiltration (RDII) Analysis

The main goal of this work is to conduct an RDII analysis of storm events during the flow monitoring period to determine the nature and extent of infiltration and inflow (I&I) leakage, and to use hydrograph interpretation to help the City focus their rehabilitation work (both secondary Sanitary Sewer Evaluation Survey (SSES) investigations and rehabilitation efforts) toward the sources contributing the leakage. It will also be determined where the flow meters should be installed for the next monitoring period and where SSES future work should be completed. Data from approximately 43 temporary flow meters and five rain gauges from the 2021 flow metering program will be used for this analysis. The analysis itself will begin in late 2021 and will be concluded by March of 2022. On February 22, 2021, Board approval was granted for this project.

22. Kline's Island Sewer System – Act 537 Planning: 2021 Flow Data QA/QC

As part of the Interim Act 537 Plan, the municipalities served by the Kline's Island Sewer System have committed to completing a sewage flow metering and modeling project beginning in 2021. The flow metering data will be used to prepare sewer modeling and identify the capital improvements needed to meet the future sewage capacity needs of the region through 2050. The flow metering program will include a mix of temporary meters (~63), existing sewage billing meters (~24), and various permanent, non-billing Signatory meters (~11). Flow metering services will be provided by Flow Assessment Services, as previously authorized in 2020. To ensure the data collected from the nine-month monitoring period are accurate and to ensure the validity of the resulting hydraulic model, a rigorous quality assurance and quality control program must be implemented. Approval of a consulting engineer's proposal for this work was granted at the January 25, 2021 Board meeting. Costs associated with these services will be paid by the City of Allentown and reimbursed through existing intermunicipal agreements and by City customers through the use of the Administrative Order Fee. The 2021 flow characterization study will be completed by October or November of 2021.

**LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS
JANUARY 2021**

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUMMARY
For the Period Ended January 31, 2021

	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	97,884	99,000	136,347	(1,116)	(38,463)	97,884	99,000	136,347	(1,116)	(38,463)	308,000	183,548	899,880	124,452	(591,880)
Suburban Wastewater	213,729	210,000	102,466	3,729	111,263	213,729	210,000	102,466	3,729	111,263	1,313,000	1,175,879	3,914,463	137,121	(2,601,463)
City Division	433,343	435,000	34,023	(1,657)	399,320	433,343	435,000	34,023	(1,657)	399,320	1,019,414	865,692	122,519	153,722	896,895
Total LCA	744,956	744,000	272,836	956	472,120	744,956	744,000	272,836	956	472,120	2,640,414	2,225,119	4,936,862	415,295	(2,296,448)
Cash Flow Statement															
Suburban Water	(247,974)	67,772	241,679	(315,745)	(489,652)	(247,974)	67,772	241,679	(315,745)	(489,652)	(3,369,800)	(3,490,153)	(3,945,823)	120,353	576,023
Suburban Wastewater	(989,388)	164,247	(1,028,416)	(1,153,636)	39,028	(989,388)	164,247	(1,028,416)	(1,153,636)	39,028	2,377,166	2,321,828	409,330	55,338	1,967,836
City Division	1,548,673	213,264	477,689	1,335,409	1,070,984	1,548,673	213,264	477,689	1,335,409	1,070,984	4,575,639	4,663,547	2,241,647	(87,908)	2,333,992
Total LCA	311,311	445,283	(309,049)	(133,972)	620,359	311,311	445,283	(309,049)	(133,972)	620,359	3,583,005	3,495,222	(1,294,846)	87,783	4,877,851
Debt Service Coverage Ratio															
Suburban Water	1.43	1.44	1.51	(0.00)	(0.08)	1.43	1.44	1.51	(0.00)	(0.08)	1.23	1.20	1.30	0.03	(0.07)
Suburban Wastewater	10.03	9.98	8.54	0.05	1.49	10.03	9.98	8.54	0.05	1.49	8.36	8.17	12.34	0.19	(3.98)
City Division	1.71	1.71	2.01	(0.00)	(0.30)	1.71	1.71	2.01	(0.00)	(0.30)	1.51	1.48	1.75	0.03	(0.25)

LEHIGH COUNTY AUTHORITY
CONSOLIDATED FINANCIAL STATEMENTS
For the Period Ended December 31, 2020

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	951,797	1,317,920	3,222,698	5,492,415	951,797	1,317,920	3,222,698	5,492,415	11,793,000	18,959,000	41,810,000	72,562,000	11,799,441	19,166,369	41,996,514	72,962,324
Connection & System Charges	33,163	115,878	136,717	285,759	33,163	115,878	136,717	285,759	926,000	972,000	3,991,000	5,889,000	912,039	865,588	3,947,981	5,725,607
Other Miscellaneous Revenues	3,255	30	4,590	7,875	3,255	30	4,590	7,875	32,000	-	59,000	91,000	30,944	628	59,249	90,821
Total Operating Revenues	988,215	1,433,829	3,364,005	5,786,049	988,215	1,433,829	3,364,005	5,786,049	12,751,000	19,931,000	45,860,000	78,542,000	12,742,423	20,032,585	46,003,744	78,778,752
Operating Expenses:																
Personnel	269,661	107,650	779,720	1,157,032	269,661	107,650	779,720	1,157,032	3,306,000	1,731,000	11,467,000	16,504,000	3,289,603	1,760,954	11,561,494	16,612,051
Shared Services - General & Administrative	23,919	9,544	64,857	98,319	23,919	9,544	64,857	98,319	629,000	153,000	1,660,000	2,442,000	663,734	155,415	1,739,417	2,558,565
Utilities	32,739	20,993	185,354	239,087	32,739	20,993	185,354	239,087	528,000	428,000	2,165,000	3,121,000	543,917	449,484	2,156,620	3,150,021
Materials and Supplies	4,596	6,057	14,133	24,786	4,596	6,057	14,133	24,786	532,000	601,000	1,828,000	2,961,000	547,582	649,208	1,932,267	3,129,057
Miscellaneous Services	235,887	449,780	8,415	694,083	235,887	449,780	8,415	694,083	3,459,000	6,137,000	1,773,500	11,369,500	3,518,076	6,209,376	1,813,371	11,540,823
Treatment and Transportation	-	230,000	-	230,000	-	230,000	-	230,000	-	3,981,000	11,000	3,992,000	-	3,977,539	12,000	3,989,539
Depreciation and Amortization	217,141	384,727	491,154	1,093,022	217,141	384,727	491,154	1,093,022	2,604,000	4,619,000	5,892,000	13,115,000	2,605,699	4,616,783	5,893,862	13,116,343
Major Maintenance Expenses	945	2,531	4,859	8,335	945	2,531	4,859	8,335	1,000	916,000	500,000	1,417,000	3,400	1,000,000	542,924	1,546,324
Other Miscellaneous	-	-	-	-	-	-	-	-	66,000	44,000	2,121,000	2,231,000	74,864	46,422	2,123,972	2,245,258
Total Operating Expenses	784,888	1,211,283	1,548,492	3,544,663	784,888	1,211,283	1,548,492	3,544,663	11,125,000	18,610,000	27,417,500	57,152,500	11,246,874	18,865,181	27,775,926	57,887,982
Net Operating Profit	203,326	222,546	1,815,513	2,241,386	203,326	222,546	1,815,513	2,241,386	1,626,000	1,321,000	18,442,500	21,389,500	1,495,549	1,167,404	18,227,817	20,890,770
Non-Operating Income (Expense)																
Interest Income	1,365	10,016	564	11,945	1,365	10,016	564	11,945	81,000	176,000	112,000	369,000	94,327	190,471	172,960	457,758
Interest (Expense)	(103,371)	(12,865)	(1,382,735)	(1,498,971)	(103,371)	(12,865)	(1,382,735)	(1,498,971)	(1,398,000)	(178,000)	(17,535,086)	(19,111,086)	(1,406,328)	(181,995)	(17,535,086)	(19,123,409)
Other Miscellaneous	(3,437)	(5,967)	-	(9,403)	(3,437)	(5,967)	-	(9,403)	(1,000)	(6,000)	-	(7,000)	-	-	-	-
Net Non-Operating Income (Expense)	(105,442)	(8,816)	(1,382,171)	(1,496,429)	(105,442)	(8,816)	(1,382,171)	(1,496,429)	(1,318,000)	(8,000)	(17,423,086)	(18,749,086)	(1,312,001)	8,475	(17,362,125)	(18,665,651)
Net Income (Loss)	97,884	213,729	433,343	744,956	97,884	213,729	433,343	744,956	308,000	1,313,000	1,019,414	2,640,414	183,548	1,175,879	865,692	2,225,119
CASH FLOW STATEMENT																
Cash Flows From Operating Activities																
Operating Revenues	988,215	1,433,829	3,364,005	5,786,049	988,215	1,433,829	3,364,005	5,786,049	12,751,000	19,931,000	45,860,000	78,542,000	12,742,423	20,032,585	46,003,744	78,778,752
Operating Expenses (ex D&A)	(567,747)	(826,556)	(1,057,338)	(2,451,641)	(567,747)	(826,556)	(1,057,338)	(2,451,641)	(8,521,000)	(13,991,000)	(21,525,500)	(44,037,500)	(8,641,176)	(14,248,398)	(21,882,064)	(44,771,639)
Non-Cash Working Capital Changes	(582,676)	(758,009)	681,720	(658,965)	(582,676)	(758,009)	681,720	(658,965)	9,346	919,995	3,205,062	4,134,403	3,418	1,000,000	3,644,174	4,647,592
Net Cash Provided by (Used in) Operating Activities	(162,209)	(150,736)	2,988,388	2,675,443	(162,209)	(150,736)	2,988,388	2,675,443	4,239,346	6,859,995	27,539,562	38,638,903	4,104,666	6,784,186	27,765,853	38,654,706
Cash Flows From Financing Activities																
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	2,000,000	2,000,000	-	-	2,000,000	2,000,000
Interest Payments	(3,789)	(12,868)	(1,144,745)	(1,161,402)	(3,789)	(12,868)	(1,144,745)	(1,161,402)	(1,406,328)	(181,995)	(13,736,935)	(15,325,259)	(1,406,328)	(181,995)	(13,736,935)	(15,325,259)
Principal Payments	(31,228)	(45,395)	(205,124)	(281,748)	(31,228)	(45,395)	(205,124)	(281,748)	(2,092,818)	(549,034)	(2,461,487)	(5,103,339)	(2,092,818)	(549,034)	(2,660,831)	(5,302,683)
Net Cash Provided by (Used in) Financing Activities	(35,017)	(58,263)	(1,349,869)	(1,443,149)	(35,017)	(58,263)	(1,349,869)	(1,443,149)	(3,499,146)	(731,029)	(14,198,422)	(18,428,598)	(3,499,146)	(731,029)	(14,397,766)	(18,627,942)
Cash Flows from Capital and Related Activities																
Non-Operating Income (Expenses)	(3,437)	(5,967)	-	(9,403)	(3,437)	(5,967)	-	(9,403)	(1,000)	(6,000)	-	(7,000)	-	-	-	-
Capital Expenditures, net	(48,677)	(41,438)	(90,411)	(180,525)	(48,677)	(41,438)	(90,411)	(180,525)	(4,190,000)	(3,921,800)	(8,877,500)	(16,989,300)	(4,190,000)	(3,921,800)	(8,877,500)	(16,989,300)
Net Cash Provided By (Used In) Capital and Related Activities	(52,113)	(47,405)	(90,411)	(189,929)	(52,113)	(47,405)	(90,411)	(189,929)	(4,191,000)	(3,927,800)	(8,877,500)	(16,996,300)	(4,190,000)	(3,921,800)	(8,877,500)	(16,989,300)
Cash Flows From Investing Activities																
Investments Converting To Cash	-	743,000	-	743,000	-	743,000	-	743,000	-	-	-	-	-	-	-	-
Purchased Investments	-	(1,486,000)	-	(1,486,000)	-	(1,486,000)	-	(1,486,000)	-	-	-	-	-	-	-	-
Interest Income	1,365	10,016	564	11,945	1,365	10,016	564	11,945	81,000	176,000	112,000	369,000	94,327	190,471	172,960	457,758
Net Cash Provided By (Used In) Investing Activities	1,365	(732,984)	564	(731,055)	1,365	(732,984)	564	(731,055)	81,000	176,000	112,000	369,000	94,327	190,471	172,960	457,758
FUND NET CASH FLOWS	(247,974)	(989,388)	1,548,673	311,311	(247,974)	(989,388)	1,548,673	311,311	(3,369,800)	2,377,166	4,575,639	3,583,005	(3,490,153)	2,321,828	4,663,547	3,495,222
DEBT SERVICE RATIO																
Debt Service Ratio (Indenture Based)																
Total Operating Revenues	951,797	1,317,920	3,222,698	5,492,415	951,797	1,317,920	3,222,698	5,492,415	11,793,000	18,959,000	41,810,000	72,562,000	11,799,441	19,166,369	41,996,514	72,962,324
Total Operating Expenses (Cash Based)	(567,747)	(826,556)	(1,057,338)	(2,451,641)	(567,747)	(826,556)	(1,057,338)	(2,451,641)	(8,521,000)	(13,991,000)	(21,525,500)	(44,037,500)	(8,641,176)	(14,248,398)	(21,882,064)	(44,771,639)
Interest Income	1,365	10,016	564	11,945	1,365	10,016	564	11,945	81,000	176,000	112,000	369,000	94,327	190,471	172,960	457,758
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-Operating Revenues (Expenses)	32,982	109,941	141,307	284,230	32,982	109,941	141,307	284,230	957,000	966,000	4,050,000	5,973,000	942,983	866,216	4,007,230	5,816,428
Cash Available For Debt Service	418,396	611,321	2,307,232	3,336,949	418,396	611,321	2,307,232	3,336,949	4,310,000	6,110,000	24,446,500	34,866,500	4,195,575	5,974,657	24,294,640	34,464,871
Interest Paid	117,194	15,166	1,144,745	1,277,105	117,194	15,166	1,144,745	1,277,105	1,406,328	181,995	13,736,935	15,325,259	1,406,328	181,995	13,736,935	15,325,259
Debt Retirement (Principal Payments)	174,402	45,753	205,124	425,278	174,402	45,753	205,124	425,278	2,092,818	549,034	2,461,487	5,103,339	2,092,818	549,034	2,660,831	5,302,683
Total Debt Service	291,596	60,919	1,349,869	1,702,383	291,596	60,919	1,349,869	1,702,383	3,499,146	731,029	16,198,422	20,428,598	3,499,146	731,029	16,397,766	20,427,942
Debt Service Ratio	1.43	10.03	1.71	1.96	1.43	10.03	1.71	1.96	1.23	8.36	1.51	1.71	1.20	8.17	1.48	1.67

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WATER
For the Period Ended January 31, 2021

STATEMENTS OF ACTIVITIES	Suburban - Water														
	Month					Year To Date					Full Year				
	Actual	Q1FC	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	951,797	951,000	872,752	797	79,044	951,797	951,000	872,752	797	79,044	11,793,000	11,799,441	10,769,841	(6,441)	1,023,159
Connection & System Charges	33,163	33,000	12,776	163	20,387	33,163	33,000	12,776	163	20,387	926,000	912,039	860,600	13,961	65,400
Other Miscellaneous Revenues	3,255	3,000	2,475	255	780	3,255	3,000	2,475	255	780	32,000	30,944	25,690	1,056	6,310
Total Operating Revenues	988,215	987,000	888,003	1,215	100,211	988,215	987,000	888,003	1,215	100,211	12,751,000	12,742,423	11,656,130	8,577	1,094,870
Operating Expenses:															
Personnel	269,661	270,000	159,691	339	(109,970)	269,661	270,000	159,691	339	(109,970)	3,306,000	3,289,603	2,776,020	(16,397)	(529,980)
Shared Services - General & Administrative	23,919	24,000	36,345	81	12,427	23,919	24,000	36,345	81	12,427	629,000	663,734	301,192	34,734	(327,808)
Utilities	32,739	33,000	30,883	261	(1,856)	32,739	33,000	30,883	261	(1,856)	528,000	543,917	419,492	15,917	(108,508)
Materials and Supplies	4,596	4,000	10,783	(596)	6,188	4,596	4,000	10,783	(596)	6,188	532,000	547,582	278,738	15,582	(253,262)
Miscellaneous Services	235,887	236,000	184,340	113	(51,547)	235,887	236,000	184,340	113	(51,547)	3,459,000	3,518,076	2,954,193	59,076	(504,807)
Treatment and Transportation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation and Amortization	217,141	217,000	220,000	(141)	2,859	217,141	217,000	220,000	(141)	2,859	2,604,000	2,605,699	2,650,715	1,699	46,715
Major Maintenance Expenses	945	1,000	268	55	(677)	945	1,000	268	55	(677)	1,000	3,400	13,768	2,400	12,768
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	66,000	74,864	-	8,864	(66,000)
Total Operating Expenses	784,888	785,000	642,311	112	(142,577)	784,888	785,000	642,311	112	(142,577)	11,125,000	11,246,874	9,394,119	121,874	(1,730,881)
Net Operating Profit	203,326	202,000	245,692	1,326	(42,366)	203,326	202,000	245,692	1,326	(42,366)	1,626,000	1,495,549	2,262,011	130,451	(636,011)
Non-Operating Income (Expense)															
Interest Income	1,365	1,000	12,556	365	(11,191)	1,365	1,000	12,556	365	(11,191)	81,000	94,327	74,594	(13,327)	6,406
Interest (Expense)	(103,371)	(103,000)	(127,804)	(371)	24,433	(103,371)	(103,000)	(127,804)	(371)	24,433	(1,398,000)	(1,406,328)	(1,434,083)	8,328	36,083
Other Miscellaneous	(3,437)	(1,000)	5,903	(2,437)	(9,340)	(3,437)	(1,000)	5,903	(2,437)	(9,340)	(1,000)	-	(2,641)	(1,000)	1,641
Net Non-Operating Income (Expense)	(105,442)	(103,000)	(109,345)	(2,442)	3,903	(105,442)	(103,000)	(109,345)	(2,442)	3,903	(1,318,000)	(1,312,001)	(1,362,131)	(5,999)	44,131
Net Income (Loss)	97,884	99,000	136,347	(1,116)	(38,463)	97,884	99,000	136,347	(1,116)	(38,463)	308,000	183,548	899,880	124,452	(591,880)
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	988,215	987,000	888,003	1,215	100,211	988,215	987,000	888,003	1,215	100,211	12,751,000	12,742,423	11,656,130	8,577	1,094,870
Operating Expenses (ex D&A)	(567,747)	(568,000)	(422,311)	253	(145,436)	(567,747)	(568,000)	(422,311)	253	(145,436)	(8,521,000)	(8,641,176)	(6,743,404)	120,176	(1,777,596)
Non-Cash Working Capital Changes	(582,676)	(267,534)	(656,153)	(315,142)	73,477	(582,676)	1,135,005	1,093,994	(1,717,681)	(1,676,670)	9,346	3,418	(467,215)	5,928	476,561
Net Cash Provided by (Used in) Operating Activities	(162,209)	151,466	(190,461)	(313,674)	28,252	(162,209)	1,554,005	1,559,686	(1,716,213)	(1,721,895)	4,239,346	4,104,666	4,445,511	134,680	(206,165)
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Payments	(3,789)	(3,789)	(5,903)	-	2,114	(3,789)	(1,406,328)	(1,756,050)	1,402,539	1,752,261	(1,406,328)	(1,406,328)	(1,756,050)	-	349,722
Principal Payments	(31,228)	(31,228)	(30,563)	-	(666)	(31,228)	(31,228)	(30,563)	-	(666)	(2,092,818)	(2,092,818)	(2,081,390)	-	(11,428)
Net Cash Provided by (Used in) Financing Activities	(35,017)	(35,017)	(36,466)	-	1,448	(35,017)	(1,437,556)	(1,786,613)	1,402,539	1,751,596	(3,499,146)	(3,499,146)	(3,837,440)	-	338,294
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	(3,437)	(1,000)	5,903	(2,437)	(9,340)	(3,437)	(1,000)	5,903	(2,437)	(9,340)	(1,000)	-	(2,641)	(1,000)	1,641
Capital Expenditures, net	(48,677)	(48,677)	(47,854)	-	(823)	(48,677)	(48,677)	(47,854)	-	(823)	(4,190,000)	(4,190,000)	(5,030,164)	-	840,164
Net Cash Provided By (Used In) Capital and Related Activities	(52,113)	(49,677)	(41,951)	(2,437)	(10,162)	(52,113)	(49,677)	(41,951)	(2,437)	(10,162)	(4,191,000)	(4,190,000)	(5,032,805)	(1,000)	841,805
Cash Flows From Investing Activities															
Investments Converting To Cash	-	-	498,000	-	(498,000)	-	-	498,000	-	(498,000)	-	-	2,382,000	-	(2,382,000)
Purchased Investments	-	-	-	-	-	-	-	-	-	-	-	-	(1,977,682)	-	1,977,682
Interest Income	1,365	1,000	12,556	365	(11,191)	1,365	1,000	12,556	365	(11,191)	81,000	94,327	74,594	(13,327)	6,406
Net Cash Provided By (Used In) Investing Activities	1,365	1,000	510,556	365	(509,191)	1,365	1,000	510,556	365	(509,191)	81,000	94,327	478,911	(13,327)	(397,911)
FUND NET CASH FLOWS	(247,974)	67,772	241,679	(315,745)	(489,652)	(247,974)	67,772	241,679	(315,745)	(489,652)	(3,369,800)	(3,490,153)	(3,945,823)	120,353	576,023
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	951,797	951,000	872,752	797	79,044	951,797	951,000	872,752	797	79,044	11,793,000	11,799,441	10,769,841	(6,441)	1,023,159
Operating Expenses (Cash Based)	(567,747)	(568,000)	(422,311)	253	(145,436)	(567,747)	(568,000)	(422,311)	253	(145,436)	(8,521,000)	(8,641,176)	(6,743,404)	120,176	(1,777,596)
Interest Income	1,365	1,000	12,556	365	(11,191)	1,365	1,000	12,556	365	(11,191)	81,000	94,327	74,594	(13,327)	6,406
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	32,982	35,000	21,154	(2,019)	11,827	32,982	35,000	21,154	(2,019)	11,827	957,000	942,983	883,648	14,017	73,352
Cash Available For Debt Service	418,396	419,000	484,152	(604)	(65,755)	418,396	419,000	484,152	(604)	(65,755)	4,310,000	4,195,575	4,984,678	114,425	(674,678)
Interest Paid	117,194	117,194	146,338	-	(29,144)	117,194	117,194	146,338	-	(29,144)	1,406,328	1,406,328	1,756,050	-	(349,722)
Debt Retirement (Principal Payments)	174,402	174,402	173,449	-	952	174,402	174,402	173,449	-	952	2,092,818	2,092,818	2,081,390	-	11,428
Total Debt Service	291,596	291,596	319,787	-	(28,191)	291,596	291,596	319,787	-	(28,191)	3,499,146	3,499,146	3,837,440	-	(338,294)
Debt Service Ratio	1.43	1.44	1.51	(0.00)	(0.08)	1.43	1.44	1.51	(0.00)	(0.08)	1.23	1.20	1.30	0.03	(0.07)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended January 31, 2021

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	
951,797	951,000	797		
33,163	33,000	163		
3,255	3,000	255		
988,215	987,000	1,215	Slightly higher revenues across the board	
269,661	270,000	339		
23,919	24,000	81		
32,739	33,000	261		
4,596	4,000	(596)		
235,887	236,000	113		
-	-	-		
217,141	217,000	(141)		
945	1,000	55		
-	-	-		
784,888	785,000	112	Slightly lower operating expenses	
203,326	202,000	1,326	Higher operating revenues along with slightly lower operating expenses	
1,365	1,000	365		
(103,371)	(103,000)	(371)		
(3,437)	(1,000)	(2,437)		
(105,442)	(103,000)	(2,442)	Higher financial fees	
97,884	99,000	(1,116)	Higher net operating profit partially offset by higher financial fees	
988,215	987,000	1,215		
(567,747)	(568,000)	253		
(582,676)	(267,534)	(315,142)		
(162,209)	151,466	(313,674)	Unfavorable working capital movements	
-	-	-		
-	-	-		
(3,789)	(3,789)	-		
(31,228)	(31,228)	-		
(35,017)	(35,017)	-	No variance	
(3,437)	(1,000)	(2,437)		
(48,677)	(48,677)	-		
(52,113)	(49,677)	(2,437)	Higher financial fees	
-	-	-		
-	-	-		
1,365	1,000	365		
1,365	1,000	365		
(247,974)	67,772	(315,745)	Lower cash from operations and unfavorable working capital movements	

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WASTEWATER
For the Period Ended January 31, 2021

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	1,317,920	1,317,000	1,232,767	920	85,154	1,317,920	1,317,000	1,232,767	920	85,154	18,959,000	19,166,369	15,962,987	(207,369)	2,996,013
Connection & System Charges	115,878	116,000	59,513	(122)	56,365	115,878	116,000	59,513	(122)	56,365	972,000	865,588	3,638,462	106,412	(2,666,462)
Other Miscellaneous Revenues	30	-	15	30	15	30	-	15	30	15	-	628	22,440	(628)	(22,440)
Total Operating Revenues	1,433,829	1,433,000	1,292,295	829	141,534	1,433,829	1,433,000	1,292,295	829	141,534	19,931,000	20,032,585	19,623,889	(101,585)	307,111
Operating Expenses:															
Personnel	107,650	108,000	71,361	350	(36,290)	107,650	108,000	71,361	350	(36,290)	1,731,000	1,760,954	1,309,472	29,954	(421,528)
Shared Services - General & Administrative	9,544	10,000	25,857	456	16,313	9,544	10,000	25,857	456	16,313	153,000	155,415	142,031	2,415	(10,969)
Utilities	20,993	21,000	23,360	7	2,366	20,993	21,000	23,360	7	2,366	428,000	449,484	296,419	21,484	(131,581)
Materials and Supplies	6,057	7,000	13,935	943	7,878	6,057	7,000	13,935	943	7,878	601,000	649,208	376,802	48,208	(224,198)
Miscellaneous Services	449,780	450,000	434,509	220	(15,271)	449,780	450,000	434,509	220	(15,271)	6,137,000	6,209,376	6,042,129	72,376	(94,871)
Treatment and Transportation	230,000	230,000	240,000	-	10,000	230,000	230,000	240,000	-	10,000	3,981,000	3,977,539	2,868,051	(3,461)	(1,112,949)
Depreciation and Amortization	384,727	385,000	383,460	273	(1,267)	384,727	385,000	383,460	273	(1,267)	4,619,000	4,616,783	4,603,995	(2,217)	(15,005)
Major Maintenance Expenses	2,531	3,000	1,802	469	(729)	2,531	3,000	1,802	469	(729)	916,000	1,000,000	64,750	84,000	(851,250)
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	44,000	46,422	-	2,422	(44,000)
Total Operating Expenses	1,211,283	1,214,000	1,194,283	2,717	(17,000)	1,211,283	1,214,000	1,194,283	2,717	(17,000)	18,610,000	18,865,181	15,703,648	255,181	(2,906,352)
Net Operating Profit	222,546	219,000	98,012	3,546	124,534	222,546	219,000	98,012	3,546	124,534	1,321,000	1,167,404	3,920,241	153,596	(2,599,241)
Non-Operating Income (Expense)															
Interest Income	10,016	10,000	22,701	16	(12,685)	10,016	10,000	22,701	16	(12,685)	176,000	190,471	185,407	(14,471)	(9,407)
Interest (Expense)	(12,865)	(13,000)	(17,302)	135	4,437	(12,865)	(13,000)	(17,302)	135	4,437	(178,000)	(181,995)	(199,654)	3,995	21,654
Other Miscellaneous	(5,967)	(6,000)	(944)	33	(5,023)	(5,967)	(6,000)	(944)	33	(5,023)	(6,000)	-	8,469	(6,000)	(14,469)
Net Non-Operating Income (Expense)	(8,816)	(9,000)	4,455	184	(13,271)	(8,816)	(9,000)	4,455	184	(13,271)	(8,000)	8,475	(5,778)	(16,475)	(2,222)
Net Income (Loss)	213,729	210,000	102,466	3,729	111,263	213,729	210,000	102,466	3,729	111,263	1,313,000	1,175,879	3,914,463	137,121	(2,601,463)
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	1,433,829	1,433,000	1,292,295	829	141,534	1,433,829	1,433,000	1,292,295	829	141,534	19,931,000	20,032,585	19,623,889	(101,585)	307,111
Operating Expenses (ex D&A)	(826,556)	(829,000)	(810,823)	2,444	(15,733)	(826,556)	(829,000)	(810,823)	2,444	(15,733)	(13,991,000)	(14,248,398)	(11,099,654)	257,398	(2,891,346)
Non-Cash Working Capital Changes	(758,009)	(56,017)	(1,138,208)	(701,992)	380,200	(758,009)	110,812	(973,517)	(868,821)	215,508	919,995	1,000,000	(788,323)	(80,005)	1,708,318
Net Cash Provided by (Used in) Operating Activities	(150,736)	547,983	(656,737)	(698,719)	506,001	(150,736)	714,812	(492,045)	(865,548)	341,309	6,859,995	6,784,186	7,735,913	75,808	(875,918)
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Payments	(12,868)	(15,166)	-	2,298	(12,868)	(12,868)	(181,995)	(164,692)	169,127	151,824	(181,995)	(181,995)	(164,692)	-	(17,304)
Principal Payments	(45,395)	(45,753)	(48,608)	358	3,212	(45,395)	(45,753)	(48,608)	358	3,212	(549,034)	(549,034)	(542,065)	-	(6,969)
Net Cash Provided by (Used in) Financing Activities	(58,263)	(60,919)	(48,608)	2,656	(9,656)	(58,263)	(227,748)	(213,299)	169,485	155,036	(731,029)	(731,029)	(706,757)	-	(24,272)
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	(5,967)	(6,000)	(944)	33	(5,023)	(5,967)	(6,000)	(944)	33	(5,023)	(6,000)	-	8,469	(6,000)	(14,469)
Capital Expenditures, net	(41,438)	(326,817)	(107,829)	285,379	66,391	(41,438)	(326,817)	(107,829)	285,379	66,391	(3,921,800)	(3,921,800)	(8,316,702)	-	4,394,902
Net Cash Provided By (Used In) Capital and Related Activities	(47,405)	(332,817)	(108,773)	285,412	61,368	(47,405)	(332,817)	(108,773)	285,412	61,368	(3,927,800)	(3,921,800)	(8,308,232)	(6,000)	4,380,432
Cash Flows From Investing Activities															
Investments Converting To Cash	743,000	-	498,000	743,000	245,000	743,000	-	498,000	743,000	245,000	-	-	5,156,000	-	(5,156,000)
Purchased Investments	(1,486,000)	-	(735,000)	(1,486,000)	(751,000)	(1,486,000)	-	(735,000)	(1,486,000)	(751,000)	-	-	(3,653,000)	-	3,653,000
Interest Income	10,016	10,000	22,701	16	(12,685)	10,016	10,000	22,701	16	(12,685)	176,000	190,471	185,407	(14,471)	(9,407)
Net Cash Provided By (Used In) Investing Activities	(732,984)	10,000	(214,299)	(742,984)	(518,685)	(732,984)	10,000	(214,299)	(742,984)	(518,685)	176,000	190,471	1,688,407	(14,471)	(1,512,407)
FUND NET CASH FLOWS	(989,388)	164,247	(1,028,416)	(1,153,636)	39,028	(989,388)	164,247	(1,028,416)	(1,153,636)	39,028	2,377,166	2,321,828	409,330	55,338	1,967,836
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	1,317,920	1,317,000	1,232,767	920	85,154	1,317,920	1,317,000	1,232,767	920	85,154	18,959,000	19,166,369	15,962,987	(207,369)	2,996,013
Operating Expenses (Cash Based)	(826,556)	(829,000)	(810,823)	2,444	(15,733)	(826,556)	(829,000)	(810,823)	2,444	(15,733)	(13,991,000)	(14,248,398)	(11,099,654)	257,398	(2,891,346)
Interest Income	10,016	10,000	22,701	16	(12,685)	10,016	10,000	22,701	16	(12,685)	176,000	190,471	185,407	(14,471)	(9,407)
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	109,941	110,000	58,584	(59)	51,357	109,941	110,000	58,584	(59)	51,357	966,000	866,216	3,669,372	99,784	(2,703,372)
Cash Available For Debt Service	611,321	608,000	503,229	3,321	108,093	611,321	608,000	503,229	3,321	108,093	6,110,000	5,974,657	8,718,112	135,343	(2,608,112)
Interest Paid	15,166	15,166	13,724	-	1,442	15,166	15,166	13,724	-	1,442	181,995	181,995	164,692	-	17,304
Debt Retirement (Principal Payments)	45,753	45,753	45,172	-	581	45,753	45,753	45,172	-	581	549,034	549,034	542,065	-	6,969
Total Debt Service	60,919	60,919	58,896	-	2,023	60,919	60,919	58,896	-	2,023	731,029	731,029	706,757	-	24,272
Debt Service Ratio	10.03	9.98	8.54	0.05	1.49	10.03	9.98	8.54	0.05	1.49	8.36	8.17	12.34	0.19	(3.98)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended January 31, 2021

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
1,317,920	1,317,000	920	
115,878	116,000	(122)	
30	-	30	
1,433,829	1,433,000	829	Slightly higher user charges
107,650	108,000	350	
9,544	10,000	456	
20,993	21,000	7	
6,057	7,000	943	
449,780	450,000	220	
230,000	230,000	-	
384,727	385,000	273	
2,531	3,000	469	
-	-	-	
1,211,283	1,214,000	2,717	Slightly lower operating expenses across the board
222,546	219,000	3,546	Higher operating revenues and lower operating expenses
10,016	10,000	16	
(12,865)	(13,000)	135	
(5,967)	(6,000)	33	
(8,816)	(9,000)	184	Slightly higher non-operating activity
213,729	210,000	3,729	Higher net operating income and favorable non-operating activity
1,433,829	1,433,000	829	
(826,556)	(829,000)	2,444	
(758,009)	(56,017)	(701,992)	
(150,736)	547,983	(698,719)	Unfavorable working capital movements
-	-	-	
-	-	-	
(12,868)	(15,166)	2,298	
(45,395)	(45,753)	358	
(58,263)	(60,919)	2,656	Lower interest and principal payments
(5,967)	(6,000)	33	
(41,438)	(326,817)	285,379	
(47,405)	(332,817)	285,412	Lower capex
743,000	-	743,000	
(1,486,000)	-	(1,486,000)	
10,016	10,000	16	
(732,984)	10,000	(742,984)	Higher reinvestment
(989,388)	164,247	(1,153,636)	Lower cash from operations and reinvested balances

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WASTEWATER
For the Period Ended January 31, 2021

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	3,222,698	3,222,000	2,976,083	698	246,614	3,222,698	3,222,000	2,976,083	698	246,614	41,810,000	41,996,514	38,263,852	(186,514)	3,546,148
Connection & System Charges	136,717	137,000	118,814	(283)	17,903	136,717	137,000	118,814	(283)	17,903	3,991,000	3,947,981	2,767,986	43,019	1,223,014
Other Miscellaneous Revenues	4,590	5,000	4,035	(410)	555	4,590	5,000	4,035	(410)	555	59,000	59,249	48,120	(249)	10,880
Total Operating Revenues	3,364,005	3,364,000	3,098,933	5	265,072	3,364,005	3,364,000	3,098,933	5	265,072	45,860,000	46,003,744	41,079,958	(143,744)	4,780,042
Operating Expenses:															
Personnel	779,720	780,000	607,900	280	(171,820)	779,720	780,000	607,900	280	(171,820)	11,467,000	11,561,494	10,745,145	94,494	(721,855)
Shared Services - General & Administrative	64,857	65,000	305,209	143	240,352	64,857	65,000	305,209	143	240,352	1,660,000	1,739,417	1,575,917	79,417	(84,083)
Utilities	185,354	185,000	170,060	(354)	(15,294)	185,354	185,000	170,060	(354)	(15,294)	2,165,000	2,156,620	1,815,047	(8,380)	(349,953)
Materials and Supplies	14,133	13,000	50,322	(1,133)	36,188	14,133	13,000	50,322	(1,133)	36,188	1,828,000	1,932,267	1,464,251	104,267	(363,749)
Miscellaneous Services	8,415	8,000	38,207	(415)	29,792	8,415	8,000	38,207	(415)	29,792	1,773,500	1,813,371	1,796,595	39,871	23,095
Treatment and Transportation	-	-	-	-	-	-	-	-	-	-	11,000	12,000	11,926	1,000	926
Depreciation and Amortization	491,154	491,000	490,000	(154)	(1,154)	491,154	491,000	490,000	(154)	(1,154)	5,892,000	5,893,862	5,880,000	1,862	(12,000)
Major Maintenance Expenses	4,859	5,000	19,754	141	14,896	4,859	5,000	19,754	141	14,896	500,000	542,924	1,130,236	42,924	630,236
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	2,121,000	2,123,972	-	2,972	(2,121,000)
Total Operating Expenses	1,548,492	1,547,000	1,681,453	(1,492)	132,961	1,548,492	1,547,000	1,681,453	(1,492)	132,961	27,417,500	27,775,926	24,419,118	358,426	(2,998,382)
Net Operating Profit	1,815,513	1,817,000	1,417,480	(1,487)	398,033	1,815,513	1,817,000	1,417,480	(1,487)	398,033	18,442,500	18,227,817	16,660,840	214,683	1,781,660
Non-Operating Income (Expense)															
Interest Income	564	1,000	62,511	(436)	(61,946)	564	1,000	62,511	(436)	(61,946)	112,000	172,960	162,074	(60,960)	(50,074)
Interest (Expense)	(1,382,735)	(1,383,000)	(1,453,283)	265	70,548	(1,382,735)	(1,383,000)	(1,453,283)	265	70,548	(17,535,086)	(17,535,086)	(14,701,033)	-	(2,834,053)
Other Miscellaneous	-	-	7,315	-	(7,315)	-	-	7,315	-	(7,315)	-	-	(1,999,362)	-	1,999,362
Net Non-Operating Income (Expense)	(1,382,171)	(1,382,000)	(1,383,457)	(171)	1,287	(1,382,171)	(1,382,000)	(1,383,457)	(171)	1,287	(17,423,086)	(17,362,125)	(16,538,321)	(60,960)	(884,765)
Net Income (Loss)	433,343	435,000	34,023	(1,657)	399,320	433,343	435,000	34,023	(1,657)	399,320	1,019,414	865,692	122,519	153,722	896,895
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	3,364,005	3,364,000	3,098,933	5	265,072	3,364,005	3,364,000	3,098,933	5	265,072	45,860,000	46,003,744	41,079,958	(143,744)	4,780,042
Operating Expenses (ex D&A)	(1,057,338)	(1,056,000)	(1,191,453)	(1,338)	134,115	(1,057,338)	(1,056,000)	(1,191,453)	(1,338)	134,115	(21,525,500)	(21,882,064)	(18,539,118)	356,564	(2,986,382)
Non-Cash Working Capital Changes	681,720	10,536	(1,455,287)	671,184	2,137,008	681,720	12,602,727	9,189,064	(11,921,007)	(8,507,343)	3,205,062	3,644,174	(3,632,653)	(439,112)	6,837,715
Net Cash Provided by (Used in) Operating Activities	2,988,388	2,318,536	452,193	669,851	2,536,195	2,988,388	14,910,727	11,096,544	(11,922,340)	(8,108,156)	27,539,562	27,765,853	18,908,187	(226,291)	8,631,375
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	2,000,000	2,000,000	-	-	2,000,000
Interest Payments	(1,144,745)	(1,144,745)	(7,315)	-	(1,137,429)	(1,144,745)	(13,736,935)	(10,651,666)	12,592,191	9,506,921	(13,736,935)	(13,736,935)	(10,651,666)	-	(3,085,269)
Principal Payments	(205,124)	(221,736)	-	16,612	(205,124)	(205,124)	(221,736)	-	16,612	(205,124)	(2,461,487)	(2,660,831)	(1,149,035)	199,344	(1,312,452)
Net Cash Provided by (Used in) Financing Activities	(1,349,869)	(1,366,481)	(7,315)	16,612	(1,342,553)	(1,349,869)	(13,958,671)	(10,651,666)	12,608,803	9,301,798	(14,198,422)	(14,397,766)	(11,800,701)	199,344	(2,397,721)
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	-	-	7,315	-	(7,315)	-	-	7,315	-	(7,315)	-	-	(1,999,362)	-	1,999,362
Capital Expenditures, net	(90,411)	(739,792)	(37,015)	649,381	(53,396)	(90,411)	(739,792)	(37,015)	649,381	(53,396)	(8,877,500)	(8,877,500)	(3,028,551)	-	(5,848,949)
Net Cash Provided By (Used In) Capital and Related Activities	(90,411)	(739,792)	(29,700)	649,381	(60,711)	(90,411)	(739,792)	(29,700)	649,381	(60,711)	(8,877,500)	(8,877,500)	(5,027,913)	-	(3,849,587)
Cash Flows From Investing Activities															
Investments Converting To Cash	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchased Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	564	1,000	62,511	(436)	(61,946)	564	1,000	62,511	(436)	(61,946)	112,000	172,960	162,074	(60,960)	(50,074)
Net Cash Provided By (Used In) Investing Activities	564	1,000	62,511	(436)	(61,946)	564	1,000	62,511	(436)	(61,946)	112,000	172,960	162,074	(60,960)	(50,074)
FUND NET CASH FLOWS	1,548,673	213,264	477,689	1,335,409	1,070,984	1,548,673	213,264	477,689	1,335,409	1,070,984	4,575,639	4,663,547	2,241,647	(87,908)	2,333,992
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	3,222,698	3,222,000	2,976,083	698	246,614	3,222,698	3,222,000	2,976,083	698	246,614	41,810,000	41,996,514	38,263,852	(186,514)	3,546,148
Operating Expenses (Cash Based)	(1,057,338)	(1,056,000)	(1,191,453)	(1,338)	134,115	(1,057,338)	(1,056,000)	(1,191,453)	(1,338)	134,115	(21,525,500)	(21,882,064)	(18,539,118)	356,564	(2,986,382)
Interest Income	564	1,000	62,511	(436)	(61,946)	564	1,000	62,511	(436)	(61,946)	112,000	172,960	162,074	(60,960)	(50,074)
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	141,307	142,000	130,165	(693)	11,143	141,307	142,000	130,165	(693)	11,143	4,050,000	4,007,230	816,744	42,770	3,233,256
Cash Available For Debt Service	2,307,232	2,309,000	1,977,306	(1,768)	329,926	2,307,232	2,309,000	1,977,306	(1,768)	329,926	24,446,500	24,294,640	20,703,552	151,860	3,742,948
Interest Paid	1,144,745	1,144,745	887,639	-	257,106	1,144,745	1,144,745	887,639	-	257,106	13,736,935	13,736,935	10,651,666	-	3,085,269
Debt Retirement (Principal Payments)	205,124	205,124	95,753	-	109,371	205,124	205,124	95,753	-	109,371	2,461,487	2,660,831	1,149,035	(199,344)	1,312,452
Total Debt Service	1,349,869	1,349,869	983,392	-	366,477	1,349,869	1,349,869	983,392	-	366,477	16,198,422	16,397,766	11,800,701	(199,344)	4,397,721
Debt Service Ratio	1.71	1.71	2.01	(0.00)	(0.30)	1.71	1.71	2.01	(0.00)	(0.30)	1.51	1.48	1.75	0.03	(0.25)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - MONTH
For the Period Ended January 31, 2021

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
3,222,698	3,222,000	698	
136,717	137,000	(283)	
4,590	5,000	(410)	
3,364,005	3,364,000	5	Higher user charges mostly offset by lower system and miscellaneous
779,720	780,000	280	
64,857	65,000	143	
185,354	185,000	(354)	
14,133	13,000	(1,133)	
8,415	8,000	(415)	
-	-	-	
491,154	491,000	(154)	
4,859	5,000	141	
-	-	-	
1,548,492	1,547,000	(1,492)	Higher materials & supplies and higher utilities offset some by lower personnel and shared services costs
1,815,513	1,817,000	(1,487)	Higher operating expenses
564	1,000	(436)	
(1,382,735)	(1,383,000)	265	
-	-	-	
(1,382,171)	(1,382,000)	(171)	Lower interest income somewhat offset by lower interest expense
433,343	435,000	(1,657)	Lower net operating profit and unfavorable non-operating activity
3,364,005	3,364,000	5	
(1,057,338)	(1,056,000)	(1,338)	
681,720	10,536	671,184	
2,988,388	2,318,536	669,851	Favorable working capital movements
-	-	-	
-	-	-	
(1,144,745)	(1,144,745)	-	
(205,124)	(221,736)	16,612	
(1,349,869)	(1,366,481)	16,612	No variance
-	-	-	
(90,411)	(739,792)	649,381	
(90,411)	(739,792)	649,381	Lower capex
-	-	-	
-	-	-	
564	1,000	(436)	
564	1,000	(436)	Lower interest income
1,548,673	213,264	1,335,409	Higher cash from operations and lower capex

LEHIGH COUNTY AUTHORITY
 CASH & INVESTMENT SUMMARY
 For the Period Ended January 31, 2021

	Suburban Water				Suburban Wastewater				City Division				Total			
	1/31/2021 Actual	2021 Forecast	2021 Budget	2020 Actual	1/31/2021 Actual	2021 Forecast	2021 Budget	2020 Actual	1/31/2021 Actual	2021 Forecast	2021 Budget	2020 Actual	1/31/2021 Actual	2021 Forecast	2021 Budget	2020 Actual
Cash																
Operating																
Unrestricted	6,847,091	3,725,278	1,173,430	5,472,832	(3,455,264)	(88,695)	4,315,728	(124,835)	7,490,889	10,517,856	19,638,366	1,583,736	10,662,844	14,154,438	25,127,525	6,931,733
Restricted	-	-	2,532,181	-	-	272	0	272	12,907,766	12,907,766	1,614,754	23,992,617	-	-	-	-
Total Operating	6,847,091	3,725,278	3,705,611	5,472,832	(3,455,264)	(88,424)	4,315,728	(124,563)	20,398,654	23,425,621	21,253,120	25,576,353	10,662,844	14,154,438	25,127,525	6,931,733
Capital																
Unrestricted	415,003	415,003	2,037,248	2,037,248	10,013,045	10,013,045	7,672,019	7,672,019	6,137,984	6,137,984	169,980	169,980	16,566,032	16,566,032	9,879,247	9,879,247
Restricted	-	-	-	-	338,218	337,932	337,932	337,932	7,500,064	7,500,064	7,500,000	7,500,000	7,838,282	7,837,996	7,837,932	7,837,932
Total Capital	415,003	415,003	2,037,248	2,037,248	10,351,263	10,350,977	8,009,951	8,009,951	13,638,048	13,638,048	7,669,980	7,669,980	24,404,314	24,404,027	17,717,179	17,717,179
Other Restricted																
Debt Reserves	1,499,832	1,499,820	1,043,094	1,499,820	-	-	-	-	29,212,973	29,212,973	37,684,197	28,454,669	30,712,805	30,712,793	38,727,291	29,954,489
Escrow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Restricted	1,499,832	1,499,820	1,043,094	1,499,820	-	-	-	-	29,212,973	29,212,973	37,684,197	28,454,669	30,712,805	30,712,793	38,727,291	29,954,489
Total Cash	8,761,926	5,640,100	6,785,954	9,009,900	6,895,999	10,262,553	12,325,679	7,885,388	63,249,675	66,276,642	66,607,297	61,701,002	65,779,963	69,271,258	81,571,995	54,603,402
Investments																
Operating																
Unrestricted	1,742,063	1,742,749	2,136,930	1,742,749	-	5,387,745	6,757,276	5,387,745	-	-	-	-	1,742,063	7,130,494	8,894,206	7,130,494
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating	1,742,063	1,742,749	2,136,930	1,742,749	-	5,387,745	6,757,276	5,387,745	-	-	-	-	1,742,063	7,130,494	8,894,206	7,130,494
Capital																
Unrestricted	1,000,000	1,000,000	1,000,000	1,000,000	7,124,778	1,000,000	1,000,000	1,000,000	-	-	-	-	8,124,778	2,000,000	2,000,000	2,000,000
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital	1,000,000	1,000,000	1,000,000	1,000,000	7,124,778	1,000,000	1,000,000	1,000,000	-	-	-	-	8,124,778	2,000,000	2,000,000	2,000,000
Other Restricted																
Debt Reserves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escrow	4,499,728	4,499,724	4,236,279	4,499,724	-	-	-	-	4,499,728	4,499,724	4,236,279	4,499,724	4,499,728	4,499,724	4,236,279	4,499,724
Total Other Restricted	4,499,728	4,499,724	4,236,279	4,499,724	-	-	-	-	4,499,728	4,499,724	4,236,279	4,499,724	4,499,728	4,499,724	4,236,279	4,499,724
Total Investments	7,241,790	7,242,473	7,373,209	7,242,473	7,124,778	6,387,745	7,757,276	6,387,745	-	-	-	-	14,366,569	13,630,219	15,130,485	13,630,219
Total Cash and Investments	16,003,717	12,882,574	14,159,163	16,252,373	14,020,778	16,650,299	20,082,955	14,273,133	63,249,675	66,276,642	66,607,297	61,701,002	80,146,532	82,901,477	96,702,480	68,233,620
Summary																
Cash																
Unrestricted	7,262,094	4,140,280	3,210,679	7,510,080	6,557,781	9,924,350	11,987,747	7,547,184	13,628,873	16,655,840	19,808,346	1,753,716	27,228,876	30,720,470	35,006,772	16,810,981
Restricted	1,499,832	1,499,820	3,575,275	1,499,820	338,218	338,204	337,932	338,204	49,620,802	49,620,802	46,798,951	59,947,286	51,458,853	51,458,826	50,712,158	61,785,310
Total Cash	8,761,926	5,640,100	6,785,954	9,009,900	6,895,999	10,262,553	12,325,679	7,885,388	63,249,675	66,276,642	66,607,297	61,701,002	78,687,729	82,179,295	85,718,930	78,596,290
Investments																
Unrestricted	2,742,063	2,742,749	3,136,930	2,742,749	7,124,778	6,387,745	7,757,276	6,387,745	-	-	-	-	9,866,841	9,130,494	10,894,206	9,130,494
Restricted	4,499,728	4,499,724	4,236,279	4,499,724	-	-	-	-	-	-	-	-	4,499,728	4,499,724	4,236,279	4,499,724
Total Investments	7,241,790	7,242,473	7,373,209	7,242,473	7,124,778	6,387,745	7,757,276	6,387,745	-	-	-	-	14,366,569	13,630,219	15,130,485	13,630,219
Total Cash and Investments	16,003,717	12,882,574	14,159,163	16,252,373	14,020,778	16,650,299	20,082,955	14,273,133	63,249,675	66,276,642	66,607,297	61,701,002	93,054,297	95,809,514	100,849,415	92,226,509