



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

Agendas & Minutes Posted:
www.lehighcountyauthority.org

LEHIGH COUNTY AUTHORITY

Published: July 17, 2023

BOARD MEETING AGENDA – July 24, 2023 – 12:00 p.m.

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

1. Call to Order

- **NOTICE OF MEETING RECORDINGS**

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

- *Public Participation Sign-In Request*

2. Review of Agenda / Executive Sessions

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

3. Approval of Minutes

- *July 10, 2023 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *Resolution No. 7-2023-1: Approval of Suburban Water Division & Suburban Wastewater Division Tapping Fees (Approval) (yellow) (digital Board packet, pages 7-96)*

WATER

- *Water Filtration Plant: PFAS Compliance Study (Approval) (green) (digital Board packet, pages 97-101)*

WASTEWATER

- *Sand Spring WWTP: Treatment Process Modification (Approval) (blue) (digital Board packet, pages 102-116)*

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

7. Monthly Financial Review (2nd Board meeting per month) (digital Board packet, pages 117-129) – **June report attached**

8. Monthly System Operations Overview (2nd Board meeting per month) (*digital Board packet, pages 130-131*) – **June report attached**
9. Staff Comments
10. Solicitor's Comments
11. Public Comments / Other Comments
12. Board Member Comments
13. Executive Sessions
14. Adjournment

UPCOMING BOARD MEETINGS		
August 14, 2023	August 28, 2023	September 11, 2023

PUBLIC PARTICIPATION POLICY

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

REGULAR MEETING MINUTES

July 10, 2023

Chairman Brian Nagle requested that Vice Chairman Amir Famili preside over today's meeting since Mr. Nagle is attending remotely. Vice Chairman Famili agreed.

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:01 p.m. on Monday, July 10, 2023, Vice Chairman Amir Famili presiding. The meeting was hybrid via in-person and video and audio advanced communication technology ("ACT"), using the Zoom internet application, including telephone option. Each Board member and other attendees of the meeting were able to hear each other attendee and be heard by each other attendee. The public could also participate in the meeting in-person or via ACT, using the Zoom internet application, including telephone option. A Roll Call of Board members present was taken. Brian Nagle, Amir Famili, Norma Cusick, Kevin Baker, Jeff Morgan, Sean Ziller, and Marc Grammes were present for Roll Call, and remained for the duration of the meeting. Ted Lyons entered the meeting at 12:03 p.m.

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

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

REVIEW OF AGENDA

Liesel Gross announced that there are no changes or additions to the agenda, and no Executive Sessions planned. However, she requested that the order of the agenda items change so that the KISS Act 537 Planning item is addressed first.

APPROVAL OF MINUTES

June 26, 2023 Meeting Minutes

On a motion by Norma Cusick, seconded Ted Lyons, the Board approved the minutes of the June 26, 2023, Board meeting as written (8-0).

PUBLIC COMMENTS

None.

KISS Act 537 Planning – Financial & Institutional Evaluation, Phase 2

Liesel Gross provided an overview of the financial and institutional evaluation that must be completed as part of the Kline's Island Sewer System (KISS) regional Act 537 Plan. Phase 1 of the evaluation was authorized in December 2022. She introduced Rocky Craley, Zachary Green, and John Mastracchio from Raffetis, who completed the Phase 1 work, and invited them to give a presentation and summary of their work to date. Mr. Craley presented the scope of work for the Phase 1 financial and institutional evaluation, which was focused on compiling financial information from each KISS municipality to develop a high-level review of current and future rates based on broad preliminary assumptions about financing structure and capital projects that may be considered as part of the Act 537 Plan. He explained the data collection process and presented a conceptual model of how customer sewer rates would be impacted by the Act 537 Plan. He explained that each community's rate-making process is different and includes components of regionally-shared treatment costs as well as community-specific costs for managing their own collection systems and

administrative processes. Therefore, each community may be impacted differently by the Act 537 Plan. He reviewed a high-level model for determining affordability of current and future sewer rates.

There was some Board discussion about how the complexity of the existing intermunicipal agreements impact this analysis. Liesel Gross explained that reviewing the agreements is the next phase of work to be undertaken. Raftelis will be unable to accurately model the rate impact for each community until the cost-sharing methodology is worked out. The intermunicipal agreements are several decades old and do not address how costs would be shared for all the different types of projects that will be included in the Act 537 Plan.

Liesel Gross thanked Raftelis for their presentation and then reviewed the scope of work for Phase 2 of the financial and institutional evaluation. She explained the financial model developed in Phase 1 will be refined to allow for deeper analysis of how the Act 537 Plan costs could be shared. In addition, a specific review of the Authority's financing capacity under the terms of its existing charter and the Allentown Water & Sewer Lease Agreement must be completed so a financing plan for the Act 537 Plan projects can be developed. A key component of the Phase 2 work includes a series of workshops with the KISS municipalities to develop agreeable concepts regarding how future project costs will be shared, so that feedback can be incorporated into the financial model. Ms. Gross recommended authorization be granted for Raftelis to continue the work in Phase 2 based on their strong performance in Phase 1.

On a motion by Jeff Morgan, seconded by Norma Cusick, the Board approved the Capital Project Authorization for the KISS Act 537 Plan Financial & Institutional Evaluation, Phase 2 in the amount of \$209,442.00 which includes the Professional Services Authorization for Financial & Institutional Evaluation Services to Raftelis in the amount of \$174,442.00 (8-0).

LCA Strategic Plan – 2023 Quarterly Progress Report

Liesel Gross provided a presentation to review highlights of the Quarterly Progress Report and the status of the strategic initiatives. She reviewed the background of the Strategic Plan, which was approved in December 2021. For the specific strategic initiatives selected for deeper focus in 2023, key milestones were identified, which are included in the quarterly report. During the presentation, Ms. Gross highlighted milestones that are not yet started but on target, in a "caution" status due to the need for a schedule adjustment, and "at-risk" milestones that may not be completed in the near-term future due to internal or external factors. She reviewed several major barriers the staff face in completing work on these strategic initiatives, including staff turnover both internally and within the consulting firms the Authority hires, new priorities identified throughout the year, and general underestimating the effort required to complete each of the selected initiatives. She noted the completing work on three largest initiatives – the regional Act 537 Plan, new asset management program, and the enterprise resource planning (ERP) software system implementation – are major cross-organizational programs being undertaken in parallel to one another. This creates significant strain on the staff. However, Ms. Gross stated there is strong internal support for these initiatives, and the report shows excellent progress on 80 percent of the 2023 milestones.

Ms. Gross reviewed the next steps in the planning process will include staff workshops to align strategies, priorities and resource requirements for the 2024 budget. She reminded the Board that the 2024 Budget will be presented in September and October and will include a review of any budget support that may be needed to continue progress on the Strategic Plan.

LCA Safety Program Review

Ed Klein and Kevin German gave a presentation on the Authority's safety program. The overall goals of the program are to maintain a high safety awareness among employees, ensure a safe work

environment, and recognize and mitigate hazards. The 2023 goals related to safety are to implement the Employee Health and Safety (EHS) Steering Committee, improve incident investigations and reporting, improve safety metrics, and enhance employee on-boarding program related to safety training. Mr. German reviewed highlights of the current safety program and noted improvements made to the head protection, fall protection, and confined space programs.

Mr. Klein reviewed priorities of the EHS Steering Committee, including revamping the incident reporting forms and process, improving safety metrics, and specific program improvements for trenching and shoring, confined space, facility security, drug screening, and training. The committee is also reviewing and developing policies. He then reviewed current safety metrics for 2021, 2022, and 2023, including breakdowns of the safety incidents by different types such as vehicular incidents, employee injuries, first-aid incidents, and lost-time accidents. Kevin German reviewed the breakdown of insurance costs over the past three years.

There was Board discussion regarding the safety metrics and other program details, such as Arc Flash, training, reporting of near misses, site inspections, and contractor protocols for safety policy adherence. Ed Klein explained that many of these items will be addressed by the EHS Steering Committee over time, but the most critical piece to start with is ensuring the incidents are recorded and tracked properly so priorities can be identified.

Allentown Division – Large Meter Chamber Replacement

Amy Kunkel gave an overview of the project to replace approximately 114 3-inch through 8-inch commercial water meter chambers that are greater than 10 years old or non-functioning. Core & Main, LP is an authorized dealer of the Sensus meters used in the Allentown Division for commercial meters and is listed on COSTARs as an approved service provider for meter equipment installation.

On a motion by Norma Cusick, seconded by Sean Ziller, the Board approved the Capital Project Authorization for Large Meter Chamber Replacement for the Construction Phase in the amount of \$181,210.00 which includes the Contract Award to Core & Main, LP Professional Service Contract in the amount of \$146,210.00 (8-0).

MONTHLY PROJECT UPDATES / INFORMATION ITEMS

Liesel Gross reviewed the items in the report that are listed for the next meeting in July.

STAFF COMMENTS

None.

SOLICITOR'S COMMENTS

Solicitor Gaul announced that he will be absent from the July 24, 2023 meeting. He also commented that the Authority's progress on the Strategic Plan is commendable.

PUBLIC COMMENTS / OTHER COMMENTS

None.

BOARD MEMBER COMMENTS

Ted Lyons commented about Board members' in-person attendance at the Authority meetings. He suggested more in-person attendance may be beneficial, but also stated he was unsure of how other

public organizations are handling their public meetings. Liesel Gross commented that many organizations are still conducting hybrid meetings such as how the Authority's meetings are conducted, and this seems to improve overall attendance by Board members and the public. Brian Nagle commented that to the extent Board members are available, in-person attendance is preferred.

EXECUTIVE SESSION

None.

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 1:53 p.m.

Norma A. Cusick
Assistant Secretary

RESOLUTION No. 7-2023-1

(Duly adopted 24 July 2023)

A RESOLUTION ESTABLISHING THE VARIOUS COMPONENTS OF THE LEHIGH COUNTY AUTHORITY CAPITAL RECOVERY FEES FOR THE VARIOUS SUBURBAN DIVISION WATER SYSTEMS; AND THE CAPITAL RECOVERY FEES FOR THE VARIOUS SUBURBAN DIVISION WASTEWATER SYSTEMS.

WHEREAS, Lehigh County Authority ("Authority") is a Pennsylvania municipal authority incorporated by the County of Lehigh in accordance with the Municipality Authorities Act to provide, among other services, wastewater and water services; and

WHEREAS, the Authority owns and/or operates water and wastewater systems throughout the Lehigh Valley of Pennsylvania, which systems are divided between its City of Allentown and Suburban Divisions; and

WHEREAS, the Authority charges certain rates and fees for use of and connection to its systems; and

WHEREAS, the Authority desires to establish its fees in accordance with §5607 of the Municipality Authorities Act, as amended by legislative action in December 2003, setting forth the appropriate fee components; and

WHEREAS, the Authority has calculated the allowable basis for such fees for certain of its wastewater and water systems in accordance with the attached calculations and its summary of the Suburban Division Water Systems Capital Recovery Fees (as Attachment A) and the Suburban Division Wastewater Systems Capital Recovery Fees (as Attachment B), the current version of which, as well as any future changes thereto, is made a part hereof as if included herein; and

NOW THEREFORE, the Lehigh County Authority, pursuant to powers invested in it by the Pennsylvania Municipality Authorities Act, as amended, hereby resolves that:

1. The capital recovery fees for wastewater and water service in various of the Authority's wastewater and water systems as indicated and shown on Attachment A, *Lehigh County Authority Water System Tapping Fee Calculation for Suburban Water Divisions, June 2023*, and Attachment B, *Lehigh County Authority Sewer System Tapping Fee Calculations for Suburban Wastewater Division, June 2023*, attached hereto and made a part hereof, are adopted effective 1 August 2023.

2. The Authority's Schedules of Rates and Charges shall be amended to reflect the fees hereby adopted, which fees shall be effective as of 1 August 2023.

3. All other Authority cost recovery fees, customer facilities fees, connection fees, and tapping fees, not contained in Attachment A or Attachment B hereto, continue in place, and are unaffected hereby.

On motion of _____, seconded by _____, this Resolution was adopted the 24th day of July 2023.

Tally of Votes: Yeas _____ Nays _____



I, Linda A. Rosenfeld, Secretary of the Lehigh County Authority Board of Directors, do hereby certify that the foregoing is a true, correct and complete copy of a resolution which was duly adopted by the Authority at a public meeting of the Authority held on 24 July 2023, after notice thereof had been duly given as required by law, at which meeting a quorum was present and voting and which resolution No. 7-2023-1 is now in full force and effect on the date of this certification.

Linda A. Rosenfeld
Secretary
Lehigh County Authority Board of Directors

Attest:

Lisa J. Miller
Executive Administrative Support Specialist

Date

ATTACHMENT A



LEHIGH COUNTY AUTHORITY WATER SYSTEM TAPPING FEE CALCULATION FOR SUBURBAN WATER DIVISIONS

June 2023

Keystone Alliance Consulting, Inc.



**LEHIGH COUNTY AUTHORITY
SUBURBAN WATER DIVISIONS
WATER SYSTEM TAPPING FEE CALCULATION**

TABLE OF CONTENTS

	<u>PAGE</u>
Water System Capital Charge Summary	1
Schedule A – Connection Fee	3
Schedule B – Customer Facilities Fee	4
Schedule C – Calculation of Water Tapping Fee	5

EXHIBITS

Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights, Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive, and Madison Park North Divisions

Exhibit 1 – Calculation of Water Tapping Fee

Exhibit 2 – Central Lehigh Division - Capacity System Assets

Exhibit 3 – Central Lehigh Division - Distribution System Assets

Exhibit 4 – North Whitehall Division – Capital Costs thru 2011

Exhibit 5 – North Whitehall Division – Additional Assets since 2011

Exhibit 6 – Washington Township Division – Assets thru 2011

Exhibit 7 – Washington Township Division – Additional Assets since 2011

Exhibit 8 – Heidelberg Heights System – Assets thru 2011

Exhibit 9 – Heidelberg Heights System – Additional Assets since 2011

Exhibit 10 – Small Systems – Capacity Assets thru 2011

Exhibit 11 – Small Systems – Distribution Assets thru 2011

Exhibit 12 – Small Systems – Additional Assets since 2011

(Small Systems include Beverly Hills, Mill Creek, Pine Lakes, Clearview Farms Estates, Madison Park North, Upper Milford Central, and Emmaus)

Exhibit 13 – Central Lehigh Division – General System Assets

Exhibit 14 – Central Lehigh Division - Contribution Summary

Exhibit 15 – North Whitehall Division - Contribution Summary

Exhibit 16 – Washington Township Division – Contribution Summary

Exhibit 17 – Heidelberg Heights System - Contribution Summary

Exhibit 18 – Central Lehigh Division - Debt Service Summary

Exhibit 19 – Washington Township Division – Debt

Exhibit 20 – System Capacity Calculation

Exhibit A1 – Arcadia West Division - Calculation of Water Tapping Fee

Exhibit A2 – Arcadia West Division – Assets thru 2011

Exhibit A3 – Arcadia West Division – Additional Assets since 2011

Exhibit A4 – Arcadia West Division – System Capacity Calculation

**LEHIGH COUNTY AUTHORITY – SUBURBAN WATER DIVISIONS
WATER SYSTEM TAPPING FEE CALCULATIONS**

**SUMMARY OF FEES CALCULATED FOR
ACT 57 TAPPING FEE STUDY**

On December 19, 1990, the Pennsylvania State Legislature enacted Act 209 of 1990, which amends the Act of July 31, 1968 (P.L. 805, No. 247). One of the provisions of that law requires municipalities that assess tapping or similar water and sewer fees to comply with the requirements of Act 203 of 1990, which amended Section 4 of the Municipalities Authorities Act. Subsequently, on December 30, 2003, the aforesaid Act 203 was amended by Act 57 of 2003 (hereinafter referred to as the “Act”). The intent of the Act was to clarify certain sections of the aforesaid Act 203. As a result, no municipality is permitted to impose any connection fee, customer facilities fee, tapping fee, or any similar fee, except as provided specifically under the Act. The various provisions of the Act are effective on or about June 30, 2005, or immediately upon any revision of a municipality’s tapping fee.

Similar to the aforesaid Act 203, the Act provides for the imposition of a tapping fee with three separate components that are designed to allow the Lehigh County Authority (the “Authority”) to recover specific capital costs. With the exception of assessments and to some extent reserve capacity fees, these are the only capital charges that an Authority may impose. Water rents and other charges that are intended to recover operation, maintenance, and debt service costs are unaffected by the Act.

The three components of the Authority’s tapping fee are (1) connection fee; (2) customer facilities fee; and (3) tapping fee. Parenthetically, it should be noted that the term “tapping fee” refers to one of the three components of the overall fee as well as the overall fee itself. Generally, the connection fee focuses on the cost of the facilities between the main and the property line while the customer facilities fee deals with the cost from the property line to the building. The tapping fee component covers the costs associated with the distribution lines and treatment facilities. The tapping fee calculation is comprised of four parts – capacity, distribution, special purpose, and reimbursement. Each part of the tapping fee may not be applicable to every municipality. In the case of the Lehigh County Authority’s tapping fees for the Suburban Water Division, the calculations are broken down by service area and the only pertinent parts are capacity, distribution, and special purpose. The situations surrounding the imposition of the reimbursement portion of the tapping fee are not applicable to the Authority at this point in time but may be imposed at a later date if warranted.

The amounts shown below in Table 1 reflect the tapping fees calculated for the Authority in accordance with Act 57 of 2003 and Act 209 of 1990. The Authority is justified in charging these figures or any lesser amount.

TABLE 1
TAPPING FEE COMPONENTS

Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights, Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive, and Madison Park North Divisions

1. Connection Fee	Actual Cost
2. Customer Facilities Fee	Actual Cost
3. Tapping Fee – Per Equivalent Dwelling Unit (EDU)	
Capacity Part	\$746.68
Distribution Part	<u>239.57</u>
TOTAL	\$986.25

Acadia West Division

4. Connection Fee	Actual Cost
5. Customer Facilities Fee	Actual Cost
6. Tapping Fee – Per Equivalent Dwelling Unit (EDU)	
Capacity Part	\$2,723.83
Distribution Part	291.17
Special Purpose Part – Fire Service	0.17 per Sq. Ft.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WATER DIVISIONS
WATER SYSTEM TAPPING FEE CALCULATIONS**

SCHEDULE A

CONNECTION FEE COMPONENT

The connection fee recovers the cost of the installation of the service line from the Authority's water main to the property line or curb stop of the dwelling or building being connected. When the Authority does incur costs associated with the installation of these facilities, the fee may be calculated using either: (1) the actual costs of the particular installation, (2) the average cost of similar installations, or (3) the current/trended value of the average cost. The Authority may require this cost to be borne by the property owner. Costs associated with the connection fee may include materials, rental equipment, labor, inspection, engineering, legal, and administration.

The Authority may also require, at its discretion, that an Escrow Account be established to cover any expenditure that the Authority may incur associated with making the connection. The amount of any Escrow can be based upon an estimate of actual costs or based upon a flat fee. In lieu of payment of a connection fee, the Authority may require the construction and dedication of these facilities by the property owner.

The Authority has selected to charge the average cost of similar installation to all customers. The costs of these connections have been calculated by the Authority staff and are shown in the fee schedule.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WATER DIVISIONS
WATER SYSTEM TAPPING FEE CALCULATIONS**

SCHEDULE B

CUSTOMER FACILITY FEE COMPONENT

This fee covers the cost of the facilities from the property line or curb stop to the proposed dwelling or building being connected to the Authority's water system. These facilities generally include the service line beyond the curb stop, the water meter, and any appurtenances.

The developer is responsible for the installation and cost of the service line beyond the curb stop. In the event that the service involves a single property, the installation, and cost will be the responsibility of the property owner. However, whether the developer or the property owner installs the service line, the installation of the water meter is the responsibility of the Authority. The cost of the water meter and its installation is borne by the developer or the property owner and is paid to the Authority. The cost of the customer facility fee component is reflected in the Authority fee schedule.

The Authority may be required to provide an inspection to ensure that the facilities have been installed properly and in conformance with its regulations. Any costs attendant to inspection will be passed onto the property owner.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WATER DIVISIONS
WATER SYSTEM TAPPING FEE CALCULATIONS**

SCHEDULE C

TAPPING FEE COMPONENT

The tapping fee is charged to allow the Authority to recover capital costs associated with the original construction and any additions or improvements to the Authority's water system as long as these facilities are still used on a regular basis. Facilities funded by others, such as a developer, and dedicated to the Authority are considered contributed capital and therefore not included in the computation of this fee.

All property owners or developers connecting to the Authority's water system are subject to a tapping fee, which may consist of up to four parts, which are calculated separately. The capacity part includes costs for the construction of those facilities that are related to the system's capacity, such as transmission mains, storage tanks, pumping stations, wells and appurtenant structures, and the treatment plant. The distribution part covers costs for the installation of distribution mains. The special purpose part covers costs for facilities that only serve a subset of customers. The remainder of the tapping fee includes the reimbursement part. This is not applicable to the Lehigh County system. Accordingly, the tapping fee will focus on the capacity, distribution, and special-purpose parts only.

The Act provides for the determination of the capital costs of the system based on either:

- Original or historical costs of the system plus any capital improvement projects as well as the interest paid to date on any indebtedness associated with the system or
- Original costs trended to current dollars plus any capital improvement projects less any remaining indebtedness (principal only) associated with the system

The net capital costs (either original or trended) are divided by the capacity amount, resulting in the tapping fee per gallon. For Lehigh County water systems, the capacity is defined as the maximum safe yield of the water system.

The tapping fee calculation under the original cost and the trended original cost methodologies are presented for each component or system. The tapping fee per is disaggregated between the capacity, distribution, and special purpose parts of the water system where applicable. Note that the special purpose part is only applicable to the Arcadia Division. In some cases, the asset details are shown on a separate exhibit if necessary.

Some of the capital costs incurred by the Authority have been funded by state and federal grants. These costs are, for the purposes of this calculation, considered to be

contributed and therefore subtracted from the total capital costs incurred by the Authority. If necessary, the contribution details are shown on a separate exhibit in some cases.

Debt is either added or subtracted in some aspect from the calculation depending on the methodology. The interest paid on the loans is added to the original cost base while the outstanding principal on the loans is subtracted from the trended original cost base.

The Authority is permitted under the Act to choose the methodology that produces the highest tapping fee. The method chosen in each case is shown in Table 1.

The special purpose part is only applicable to a particular group of customers. The special purpose part is designed to recover the Authority's cost for facilities that serve a special purpose or specific area, such as fire service. Fees would be separately calculated for each applicable group and applied to new users as appropriate. The same calculation methodology used for the capacity part and the collection part would apply.

The Act references one other aspect of the tapping fee component, specifically the reimbursement part. This is not currently applicable to the Authority's tapping fee. However, if the situation arises, it could be addressed and incorporated into the calculations.

Where appropriate, a reimbursement component may be included in the tapping fee charged for new connections to facilities constructed by others for which a reimbursement is due to the person/developer constructing the facilities. Generally, this reimbursement will be defined in a written reimbursement agreement between the Authority and the person constructing the facilities. Typically such agreements reimburse the cost of the excess capacity available for use by future connections. At this time the Authority has no agreement(s) with any developer(s) which would require the calculation of a reimbursement part.

LEHIGH COUNTY AUTHORITY
SUMMARY OF WATER FUND CAPITAL RECOVERY FEES
Updated June 2023

Exhibits	Charge	Per Gallon			Per EDU			Gallons per EDU	(1) Change %	Costing Method
		Existing Charge 8/2/2022	Maximum Charge 6/17/2023	New Charge	Existing Charge 8/2/2022	Maximum Charge 6/17/2023	New Charge			
1-20	Suburban Water - Central Lehigh Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - Washington Township Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - North Whitehall Township Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - Heidelberg Heights Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
A1-A4	Suburban Water - Arcadia Division									
	Capacity	\$ 14.74	\$14.97	\$14.97	\$ 2,568.32	\$ 2,723.83	\$2,723.83	182.0	6.05%	Trended Original Cost
	Distribution	\$ 1.58	\$1.60	\$1.60	\$ 275.04	\$ 291.17	\$291.17	182.0	5.87%	Trended Original Cost
	Fire Service	\$ 0.17	\$0.17	\$0.17						Trended Original Cost
1-20	Suburban Water - Mill Creek Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - Pine Lakes Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - Beverly Hills Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost
1-20	Suburban Water - Clearview Farms Estates Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0		Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0		Original Cost
1-20	Suburban Water - Madison Park North Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0		Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0		Original Cost

LEHIGH COUNTY AUTHORITY
SUMMARY OF WATER FUND CAPITAL RECOVERY FEES
Updated June 2023

Exhibits	Charge	Per Gallon			Per EDU			Gallons	(1) Change	Costing Method
		Existing Charge 8/2/2022	Maximum Charge 6/17/2023	New Charge	Existing Charge 8/2/2022	Maximum Charge 6/17/2023	New Charge		%	
1-20	Suburban Water - Upper Milford Central Division									
	Capacity	\$ 3.96	\$4.42	\$4.42	\$ 659.25	\$ 746.68	\$746.68	169.0	13.26%	Original Cost
	Distribution	\$ 0.75	\$1.42	\$1.42	\$ 125.03	\$ 239.57	\$239.57	169.0	91.61%	Original Cost

(1) Based on Charge Per EDU

SCHEDULE OF WATER RATES AND CHARGES**Tapping, Connection and Customer Facilities Fees****Common Rates Division**

Including Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights, Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive, and Madison Park North

Size of Service Line	Tapping Fee		Connection Fee	Customer Facilities Fee
	Distribution	Capacity		
MFR*	\$ 159.72	\$ 497.78	*	*
3/4"	239.57	746.68	*	*
1"	399.29	1,244.46	*	*
1-1/2"	798.58	2,488.92	*	*
2"	1,277.72	3,982.28	*	*
3"	2,395.73	7,466.77	*	*
4"	3,992.88	12,444.62	*	*
6"	7,985.76	24,889.25	*	*
8"	12,777.22	39,822.80	*	*
10"	18,367.25	57,245.27	*	*
12"	34,338.77	107,023.77	*	*

Source: Distribution - Exhibit 1, Distribution Tapping Fee per EDU, Original Cost
Capacity - Exhibit 1, Capacity Tapping Fee per EDU, Original Cost

Arcadia Division

Size of Service Line	Tapping Fee		Connection Fee	Customer Facilities Fee
	Distribution	Capacity		
MFR*	\$ 194.11	\$ 1,815.88	*	*
3/4"	291.17	2,723.83	*	*
1"	485.28	4,539.71	*	*
1-1/2"	970.56	9,079.42	*	*
2"	1,552.89	14,527.08	*	*
3"	2,911.67	27,238.27	*	*
4"	4,852.79	45,397.12	*	*
6"	9,705.58	90,794.24	*	*
8"	15,528.93	145,270.78	*	*
10"	22,322.83	208,826.74	*	*
12"	41,733.99	390,415.22	*	*

Special Purpose Fire Service - \$0.17 Per Square Foot of Building Space

Source: Distribution - Exhibit A1, Distribution Tapping Fee per EDU, Trended Cost
Capacity - Exhibit A1, Capacity Tapping Fee per EDU, Trended Cost
Special Purpose Fire Service - Exhibit A1, Special Purpose Fee per Square Foot, Trended Cost

Exhibit No. 1
Lehigh County Authority
Suburban Water - Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights,
Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive.
and Madison Park North Divisions
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

A. Capacity Part	Exhibit Reference	Original Cost	Trended Cost
Central Lehigh Division			
Transmission	2	\$26,570,668	\$47,342,654
Land	2	1,324,647	1,324,647
Pump Station Structure	2	4,551,075	7,659,178
Electrical & Pumping	2	6,065,349	10,312,710
Purification	2	1,084,642	1,878,960
Wells	2	1,581,929	2,740,077
Reservoir	2	5,658,972	9,737,227
Allentown Interconnection - Phases 1 & 2 (C)		4,243,332	6,083,637
Additions since 2011	2	6,365,193	7,278,888
North Whitehall Division			
Project Costs	4	\$1,563,252	\$3,825,795
Planning Costs	4	196,939	289,768
Additional Assets	5	495,670	607,121
Washington Township System			
Transmission Assets	6	\$1,704,377	\$3,599,447
Capacity Assets	6	549,264	1,159,982
Additional Assets	7	-	-
Heidelberg Heights System			
Pump Station Structure	8	\$126,125	\$230,315
Pumping	8	41,277	75,375
Purification	8	2,172	3,967
Reservoir	8	258,507	472,054
Wells	8	37,518	68,511
Land	8	41,712	41,712
Additional Assets	9	15,845	20,005
Small Water Systems			
Beverly Hills	10	\$20,491	\$35,409
Mill Creek	10	7,790	13,113
Pine Lakes	10	6,517	13,376
Clearview Farms Estates	10	8,323	14,843
Madison Park North	10	199,028	291,178
Upper Milford Central	10	60,882	96,737
Additional Assets	12	3,363,252	3,899,899
General Assets	13	3,060,736	3,945,570
		<hr/>	<hr/>
		\$69,205,483	\$113,062,155
Less: Contributions			
Central Lehigh Division			
Transmission	13	\$17,080,979	\$30,488,420
Land	13	176,650	263,476
Pump Station Structure	13	1,134,965	1,872,665
Electrical & Pumping	13	1,679,812	2,933,171
Purification	13	14,465	22,999
Wells	13	371,018	579,870
Reservoir	13	352,860	661,822
North Whitehall Division	14	242,746	443,334

Exhibit No. 1
Lehigh County Authority
Suburban Water - Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights,
Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive.
and Madison Park North Divisions
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Washington Township System	15	1,186,810	2,506,407
Heidelberg Heights System	16	299,910	547,661
		<hr/>	<hr/>
		\$22,540,216	\$40,319,824
Net Capital		\$46,665,267	\$72,742,330
Financing Costs for Capacity Part		30,599	
Total Cost of Capacity Part		<hr/>	<hr/>
		\$46,695,866	\$72,742,330
Plus: Interest Paid On Debt			
Central Lehigh Division	17	\$8,338,928	n/a
Washington Township System	18	346,971	n/a
Less: Outstanding Debt			
Central Lehigh Division	17	n/a	32,204,252
Washington Township System	18	n/a	-
		<hr/>	<hr/>
Eligible Cost for Capacity Part		\$55,381,765	\$40,538,078
Total Capacity			
Central Lehigh Division	19	11,743,860	11,743,860
North Whitehall Division	19	553,623	553,623
Washington Township System	19	140,000	140,000
Heidelberg Heights System	19	30,649	30,649
Beverly Hills	19	7,346	7,346
Mill Creek	19	5,135	5,135
Pine Lakes	19	9,719	9,719
Clearview Farms Estates	19	9,054	9,054
Madison Park North	19	14,900	14,900
Upper Milford Central	19	20,603	20,603
		<hr/>	<hr/>
		12,534,888	12,534,888
Capacity Tapping Fee per Gallon		\$4.42	\$3.23
Gallon per EDU for Capacity Part (1)		169.0	169.0
Capacity Tapping Fee per EDU		\$746.68	\$546.55

Exhibit No. 1
Lehigh County Authority
Suburban Water - Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights,
Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive.
and Madison Park North Divisions
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

B. <u>Distribution Part</u>	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Central Lehigh Division			
Capital Expenditures	3	\$26,774,561	\$48,188,345
Additions since 2011	3	569,224	693,033
North Whitehall Division			
Project Costs	4	\$970,116	\$2,423,998
Services	4	278,583	506,484
Hydrants	4	75,339	128,415
Additional Assets	5	5,429	7,569
Washington Township System			
Distribution Assets	6	\$767,614	\$1,621,113
Metering	6	1,429	3,018
Hydrants	6	75,947	160,391
Services	6	154,249	325,756
Additional Assets	7	3,364	4,727
Heidelberg Heights System			
Distribution	8	\$136,758	\$249,732
Metering	8	68,027	124,223
Services	8	43,449	79,342
Hydrants	8	5,648	10,314
Additional Assets	9	-	-
Small Water Systems			
Beverly Hills	11	\$32,483	\$58,938
Mill Creek	11	13,686	24,989
Pine Lakes	11	6,865	14,090
Clearview Farms Estates	11	20,440	37,377
Madison Park North	11	90,677	136,825
Upper Milford Central	11	157,279	266,864
Additional Assets	12	3,428	4,359
General Assets	13	8,171,267	10,185,296
		<hr/>	<hr/>
		\$38,425,865	\$65,255,200
Less: Contributions			
Central Lehigh Division	13	\$21,279,629	\$38,236,600
North Whitehall Division	14	432,024	797,703
Washington Township System	15	428,641	905,240
Heidelberg Heights System	16	150,090	274,076
		<hr/>	<hr/>
		\$22,290,384	\$40,213,620
Net Capital		\$16,135,481	\$25,041,581
Financing Costs for Distribution Part		33,031	
Total Cost of Distribution Part		<hr/>	<hr/>
		\$16,168,511	\$25,041,581

Exhibit No. 1
Lehigh County Authority
Suburban Water - Central Lehigh, North Whitehall, Washington Township, Heidelberg Heights,
Pine Lakes, Mill Creek, Beverly Hills, Clearview Farms Estates, Upper Milford Central, Emmaus Consecutive.
and Madison Park North Divisions
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Plus: Interest Paid On Debt			
Central Lehigh Division	17	\$1,391,756	n/a
Washington Township System	18	209,073	n/a
Less: Outstanding Debt			
Central Lehigh Division	17	n/a	10,716,905
Washington Township System	18	n/a	-
Eligible Cost for Distribution Part		<u>\$17,769,340</u>	<u>\$14,324,675</u>
Total Capacity		12,534,888	12,534,888
Distribution Tapping Fee per Gallon		\$1.42	\$1.14
Gallon per EDU for Distribution Part (1)		169.0	169.0
Distribution Tapping Fee per EDU		\$239.57	\$193.13
Total Tapping Fee per Gallon		\$5.84	\$4.38
Total Tapping Fee per EDU		\$986.25	\$739.68
(1) Average Household Size Per 2021 American Community Survey 5-Year Estimate for Lehigh County			2.6
Gallons Per Capita Per Day Allowed Per Act 57 of 2003			<u>65</u>
Total Gallons Per Day Per EDU			169

Exhibit No. 2
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Capacity Assets

Expenditure	Year Placed in Service	Original Cost	Cost Index		Trended Current Replacement Cost
			Original	Current	
Transmission					
Balance as of 12/31/2004	2004	\$16,532,045	7115	13345	\$31,007,387
2005 Additions	2005	538,656	7446	13345	965,389
2006 Additions	2006	2,707,636	7751	13345	4,661,623
2007 Additions	2007	888,900	7967	13345	1,488,938
2008 Additions	2008	3,083,231	8310	13345	4,951,400
2009 Additions	2009	246,154	8570	13345	383,301
2010 Additions	2010	2,146,998	8799	13345	3,256,276
2011 Additions	2011	427,048	9070	13345	628,341
		\$26,570,668			\$47,342,654
Land					
Balance as of 12/31/2004	2004	\$892,578			\$892,578
2005 Additions	2005	-			-
2006 Additions	2006	-			-
2007 Additions	2007	-			-
2008 Additions	2008	231,723			231,723
2009 Additions	2009	3,659			3,659
2010 Additions	2010	98,571			98,571
2011 Additions	2011	98,116			98,116
		\$1,324,647			\$1,324,647
Pump Station Structure					
Balance as of 12/31/2004	2004	\$1,673,835	7115	13345	\$3,139,433
2005 Additions	2005	266,003	7446	13345	476,735
2006 Additions	2006	1,814	7751	13345	3,123
2007 Additions	2007	4,266	7967	13345	7,146
2008 Additions	2008	405,183	8310	13345	650,688
2009 Additions	2009	1,218,866	8570	13345	1,897,971
2010 Additions	2010	894,362	8799	13345	1,356,447
2011 Additions	2011	86,746	9070	13345	127,634
		\$4,551,075			\$7,659,178
Electrical & Pumping					
Balance as of 12/31/2004	2004	\$2,170,057	7115	13345	\$4,070,144
2005 Additions	2005	589,694	7446	13345	1,056,860
2006 Additions	2006	34,162	7751	13345	58,815
2007 Additions	2007	309,397	7967	13345	518,251
2008 Additions	2008	1,031,249	8310	13345	1,656,096
2009 Additions	2009	722,691	8570	13345	1,125,346
2010 Additions	2010	1,095,922	8799	13345	1,662,146
2011 Additions	2011	112,177	9070	13345	165,053
		\$6,065,349			\$10,312,710

Exhibit No. 2
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Capacity Assets

Expenditure	Year Placed	Original Cost	Cost Index		Trended Current
	in Service		Original	Current	Replacement Cost
Purification					
Balance as of 12/31/2004	2004	\$598,211	7115	13345	\$1,122,000
2005 Additions	2005	46,479	7446	13345	83,300
2006 Additions	2006	1,184	7751	13345	2,038
2007 Additions	2007	57,861	7967	13345	96,919
2008 Additions	2008	34,803	8310	13345	55,891
2009 Additions	2009	366	8570	13345	570
2010 Additions	2010	210,487	8799	13345	319,238
2011 Additions	2011	135,251	9070	13345	199,003
		\$1,084,642			\$1,878,960
Wells					
Balance as of 12/31/2004	2004	\$817,609	7115	13345	\$1,533,502
2005 Additions	2005	-	7446	13345	-
2006 Additions	2006	-	7751	13345	-
2007 Additions	2007	-	7967	13345	-
2008 Additions	2008	358,021	8310	13345	574,950
2009 Additions	2009	380,243	8570	13345	592,100
2010 Additions	2010	26,208	8799	13345	39,749
2011 Additions	2011	(152)	9070	13345	(224)
		\$1,581,929			\$2,740,077
Reservoir					
Balance as of 12/31/2004	2004	\$2,442,336	7115	13345	\$4,580,828
2005 Additions	2005	-	7446	13345	-
2006 Additions	2006	268,731	7751	13345	462,663
2007 Additions	2007	232,238	7967	13345	389,007
2008 Additions	2008	2,016,412	8310	13345	3,238,181
2009 Additions	2009	260,350	8570	13345	405,407
2010 Additions	2010	338,896	8799	13345	513,992
2011 Additions	2011	100,009	9070	13345	147,149
		\$5,658,972			\$9,737,227

Exhibit No. 2
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Capacity Assets

Expenditure	Year Placed		Cost Index		Trended Current
	in Service	Original Cost	Original	Current	Replacement Cost
Additions since 2011					
SCADA On-Going Upgrade	2012	\$8,748	9308	13345	\$12,541
SCADA On-Going Upgrade	2013	10,136	9547	13345	14,169
SCADA On-Going Upgrade	2014	9,335	9806	13345	12,705
SCADA On-Going Upgrade	2015	1,274	10039	13345	1,694
SCADA On-Going Upgrade	2016	12,374	10339	13345	15,972
SCADA On-Going Upgrade	2017	5,919	10738	13345	7,356
SCADA On-Going Upgrade	2018	11,832	11062	13345	14,275
SCADA On-Going Upgrade	2019	114,723	11281	13345	135,708
SCADA On-Going Upgrade	2020	54,509	11466	13345	63,443
SCADA On-Going Upgrade	2021	277,650	12149	13345	304,985
SCADA On-Going Upgrade	2022	735,599	13007	13345	754,728
Well WL-8 Upgrades	2012	48	9308	13345	69
Well WL-8 Upgrades	2013	893	9547	13345	1,249
Well WL-12 Upgrades	2012	48	9308	13345	69
Well WL-12 Upgrades	2021	1,399	12149	13345	1,537
Auxiliary Pumping Stn	2014	4,416	9806	13345	6,010
Auxiliary Pumping Stn	2015	50,058	10039	13345	66,541
Auxiliary Pumping Stn	2016	27,496	10339	13345	35,491
Auxiliary Pumping Stn	2017	12,082	10738	13345	15,015
Auxiliary Pumping Stn	2018	37,458	11062	13345	45,189
Auxiliary Pumping Stn	2019	1,313,268	11281	13345	1,553,491
Auxiliary Pumping Stn	2020	86,079	11466	13345	100,187
Auxiliary Pumping Stn	2021	1,445	12149	13345	1,587
Gen System Improvements	2015	73,952	10039	13345	98,304
Gen System Improvements	2016	2,637	10339	13345	3,404
Gen System Improvements	2017	71,771	10738	13345	89,198
Gen System Improvements	2018	145,085	11062	13345	175,030
Gen System Improvements	2019	272,383	11281	13345	322,207
Gen System Improvements	2020	162,385	11466	13345	188,999
Gen System Improvements	2021	248,737	12149	13345	273,225
Gen System Improvements	2022	14,092	13007	13345	14,458

Exhibit No. 2
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Capacity Assets

Expenditure	Year Placed		Cost Index		Trended Current Replacement Cost
	in Service	Original Cost	Original	Current	
Kohler Tract Pump Station	2016	8,526	10339	13345	11,005
Kohler Tract Pump Station	2017	70,860	10738	13345	88,067
Kohler Tract Pump Station	2018	34,271	11062	13345	41,345
Kohler Tract Pump Station	2019	127,209	11281	13345	150,478
Kohler Tract Pump Station	2020	1,570,573	11466	13345	1,827,985
Kohler Tract Pump Station	2021	159,431	12149	13345	175,127
Kohler Tract Pump Station	2022	10,750	13007	13345	11,030
CLD Well Improvements	2018	510	11062	11392	525
CLD Well Improvements	2019	23,802	11281	13345	28,156
CLD Well Improvements	2020	20,834	11466	13345	24,249
CLD Well Improvements	2021	1,895	12149	13345	2,081
CLD Well Improvements	2022	54,625	13007	13345	56,045
Upper System Pumping Station Improvements	2021	67,119	12149	13345	73,727
Upper System Pumping Station Improvements	2022	32,495	13007	13345	33,340
Far View Pump Station Demolition	2021	22,797	12149	13345	25,041
Far View Pump Station Demolition	2022	134,275	13007	13345	137,767
South Whitehall Emergency Interconnect	2022	257,390	13007	13345	264,084
New Upper System Reservoir Planning	2022	7,227	Excluded - Pending Project Completion		
Reservoir 1 Repair	2022	665,906	Excluded - Repair		
		\$6,365,193			\$7,278,888

Exhibit No. 3
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Distribution Assets

Expenditure	Year Placed in Service	Original Cost	Cost Index		Trended Current Replacement Cost
Original			Original	Current	
Distribution					
Balance as of 12/31/2004	2004	\$17,953,436	7115	13345	\$33,673,338
2005 Additions	2005	1,397,738	7446	13345	2,505,050
2006 Additions	2006	1,586,685	7751	13345	2,731,729
2007 Additions	2007	1,134,082	7967	13345	1,899,626
2008 Additions	2008	2,325,782	8310	13345	3,735,003
2009 Additions	2009	1,235,541	8570	13345	1,923,936
2010 Additions	2010	891,843	8799	13345	1,352,627
2011 Additions	2011	249,454	9070	13345	367,036
		\$26,774,561			\$48,188,345
Additions since 2011					
Distribution Mains	2012	\$18,641		Excluded Repairs	
Distribution Mains	2013	13,853		Excluded Repairs	
Distribution Mains	2014	22,281		Excluded Repairs	
Distribution Mains	2015	22,992		Excluded Repairs	
Dries Waterline-Upsizing	2012	118	9308	13345	\$169
Meter Installation for New Customers	2012	81,664		Excluded Contribution	
Meter Installation for New Customers	2013	101,173		Excluded Contribution	
Meter Installation for New Customers	2014	85,560		Excluded Contribution	
Meter Installation for New Customers	2015	98,957		Excluded Contribution	
Meter Installation for New Customers	2016	141,772		Excluded Contribution	
Meter Installation for New Customers	2017	132,492		Excluded Contribution	
Meter Installation for New Customers	2018	103,097		Excluded Contribution	
Meter Installation for New Customers	2019	80,788		Excluded Contribution	
Meter Installation for New Customers	2020	65,963		Excluded Contribution	
Meter Installation for New Customers	2021	29,283		Excluded Contribution	
Meter Installation for Existing Customers	2012	44,448	9308	13345	63,724
Meter Installation for Existing Customers	2013	16,641	9547	13345	23,262
Meter Installation for Existing Customers	2014	19,989	9806	13345	27,203
Meter Installation for Existing Customers	2015	5,479	10039	13345	7,282
Meter Installation for Existing Customers	2016	4,065	10339	13345	5,247
Meter Installation for Existing Customers	2017	6,610	10738	13345	8,215
Meter Installation for Existing Customers	2018	4,904	11062	13345	5,917
Meter Installation for Existing Customers	2019	20,144	11281	13345	23,829
Meter Installation for Existing Customers	2020	3,565	11466	13345	4,149
Meter Installation for Existing Customers	2021	4,510	12149	13345	4,954
Meter Installation for Existing Customers	2022	188	13007	13345	193
Dries Waterline Ext	2012	573	9308	13345	821
Wat Sys Optimization	2014	1,336	9806	13345	1,818
Wat Sys Optimization	2015	6,336	10039	13345	8,422
Wat Sys Optimization	2016	913	10339	13345	1,178

Exhibit No. 3
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Distribution Assets

Expenditure	Year Placed		Cost Index		Trended Current Replacement Cost
	in Service	Original Cost	Original	Current	
Kohler Tract Main Extension	2018	13,593	11062	13345	16,398
Kohler Tract Main Extension	2019	167,259	11281	13345	197,854
Kohler Tract Main Extension	2020	46,708	11466	13345	54,363
Kohler Tract Main Extension	2021	6,204	12149	13345	6,815
Kohler Tract Main Extension	2022	382	13007	13345	392
Indian Creek Rd. Main Extension	2018	1,278	11062	13345	1,541
Indian Creek Rd. Main Extension	2019	185,635	11281	13345	219,592
Indian Creek Rd. Main Extension	2020	8,189	11466	13345	9,532
Indian Creek Rd. Main Extension	2022	160	13007	13345	164
		\$569,224			\$693,033

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Year	Total System Costs	Original Cost			
			Distribution	Capacity	Meters/ Services	Hydrants
<u>Financed thru Reserves:</u>						
Original Acquisition Costs:						
Penn Hills	1989	\$91,997	\$55,566	\$23,735	\$12,696	\$0
Crestwood	1991	123,946	78,706	28,136	17,105	-
Schnecksville North	1991	228,946	97,531	77,384	41,668	12,363
Other Costs:						
NW Interconnection	1991	\$2,874	\$2,874	\$0	\$0	\$0
NW Interconnection	1992	136,629	136,629	-	-	-
NW Interconnection	1993	4,705	4,705	-	-	-
NW Interconnection	1995	209	209	-	-	-
NW Interconnection	2011	9,218			\$1,536	\$7,682
Penn Hills System Improv.	1990	3,851	-	3,851	-	-
Penn Hills System Improv.	1991	316	-	316	-	-
King's IGA	2011	1,680			650	1,029
Union Lutheran Church	2011	2,054	-	-	2,054	-
Visions Child Care	2011	863	-	-	863	-
Crestwood Pump Station Repairs	2003	85,786	-	85,786	-	-
Crestwood Pump Station Repairs	2004	1,335	-	1,335	-	-
Crestwood Interconnection	2004	8,618	-	8,618	-	-
Sand Spring Acquisition	2004	55,292	37,599	6,690	6,967	4,036
NWIP Lot 10	2011	1,262	-	-	1,262	-
NWIP Lot 11	2011	992	-	-	992	-
CVS	2011	1,355	-	-	1,355	-
NWIP Lots 19/20	2011	1,013	-	-	1,013	-
Orefield Cold Storage	2005	4,372	-	4,372	-	-
Orefield Cold Storage	2006	337	-	337	-	-
Orefield Cold Storage	2007	300	-	300	-	-
Orefield Cold Storage	2008	183	-	183	-	-
Orefield Cold Storage	2011	72			72	-
NWIP Lot 3	2011	1,158	-	-	1,158	-
Gateway North	2002	4,451	4,451	-	-	-
Gateway North	2003	85	85	-	-	-
Gateway North	2004	303	303	-	-	-
Gateway North	2011	1,621			866	756
NWIP Lots 5/6	2011	865	-	-	865	-
Tantoros Office Bldg	2011	300	-	-	300	-
OVEW Subd - Ph 2	1993	6,373	6,373	-	-	-
OVEW Subd - Ph 2	1994	4,440	4,440	-	-	-
OVEW Subd - Ph 2	1995	5,295	5,295	-	-	-
OVEW Subd - Ph 2	1996	872	872	-	-	-
OVEW Subd - Ph 2	2011	3,983			1,761	2,222
OVEW Subd - Ph 3	1997	901	901	-	-	-
OVEW Subd - Ph 3	1998	178	178	-	-	-
OVEW Subd - Ph 3	2011	426			226	200
True Life Ministries	1995	126	67	59	-	-
True Life Ministries	1996	3,616	1,930	1,686	-	-

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Year	Total System Costs	Original Cost			
			Distribution	Capacity	Meters/ Services	Hydrants
True Life Ministries	1997	2,194	1,171	1,023	-	-
True Life Ministries	2011	312			31	281
Allentown Teachers CU	2011	949	-	-	949	-
NP IP Lot 18	2011	1,150	-	-	1,150	-
Golden Asset Investments	2011	434	-	-	434	-
Community Fire Co # 1	2005	6,566	6,566	-	-	-
Community Fire Co # 1	2006	357	357	-	-	-
Community Fire Co # 1	2007	40	40	-	-	-
Community Fire Co # 1	2011	757		-	192	565
NWIP Lot 17	2011	776	-	-	776	-
DiCarlo Land Development	2002	1,688	1,688	-	-	-
DiCarlo Land Development	2011	686			330	356
NWIP Lots 5&6 Self Storage	2011	472	-	-	472	-
Gateway View	2005	4,162	4,162	-	-	-
Gateway View	2006	101	101	-	-	-
Gateway View	2007	203	203	-	-	-
Gateway View	2008	688	688	-	-	-
Gateway View	2011	623			248	375
NWIP Lot 14 - A-town Valve	2011	1,078	-	-	1,078	-
NWIP Lot 15	2011	2,014	-	-	2,014	-
Parkland Court	2011	1,064	-	-	1,064	-
OVEW Est 4, Lots 91 & 92	2011	1,041	-	-	1,041	-
Parkland Pointe	2008	12,153	12,153	-	-	-
Parkland Pointe	2009	1,004	1,004	-	-	-
Parkland Pointe	2010	743	743	-	-	-
Parkland Pointe	2011	3,302			1,636	1,666
		\$847,756	\$467,590	\$243,811	\$104,824	\$31,532

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Year	Total System Costs	Original Cost			
			Distribution	Capacity	Meters/ Services	Hydrants
<u>Financed thru Debt:</u>						
Crestwood Paymts by Agmt	1992	\$3,400	\$3,400	-	\$0	\$0
Crestwood Paymts by Agmt	1993	1,700	1,700	-	-	-
Crestwood Paymts by Agmt	1994	850	850	-	-	-
Crestwood Paymts by Agmt	1995	850	850	-	-	-
Crestwood Paymts by Agmt	1996	850	850	-	-	-
Crestwood Paymts by Agmt	1997	425	425	-	-	-
Crestwood Paymts by Agmt	2001	1,275	1,275	-	-	-
Crestwood Paymts by Agmt	2002	425	425	-	-	-
Crestwood Paymts by Agmt	2004	850	850	-	-	-
Crestwood Paymts by Agmt	2011	1,875			1,875	-
Sch North Paymts by Agmt	1995	9,053	9,053	-	-	-
Sch North Paymts by Agmt	1996	4,792	4,792	-	-	-
Sch North Paymts by Agmt	1997	3,727	3,727	-	-	-
Sch North Paymts by Agmt	1998	2,131	2,131	-	-	-
Sch North Paymts by Agmt	1999	5,325	5,325	-	-	-
Sch North Paymts by Agmt	2011	10,223			7,403	2,820
NBMA Interconnection	1992	643,808	-	643,808	-	-
NBMA Interconnection	1993	296	-	296	-	-
Distribution Sys. Mains	1992	8,852	8,852	-	-	-
Distribution Sys. Mains	1993	517	517	-	-	-
Distribution Sys. Mains	1994	1,283	1,283	-	-	-
Distribution Sys. Mains	1995	485	485	-	-	-
Distribution Sys. Mains	1996	2,890	2,890	-	-	-
OVEW Supply	1993	2,168	-	2,168	-	-
OVEW Supply	1994	25,881	-	25,881	-	-
OVEW Supply	1995	35,112	-	35,112	-	-
OVEW Supply	1996	1,811	-	1,811	-	-
NW Main Ext.	1995	412,221	284,581	127,640	-	-
NW Main Ext.	1996	9,035	6,238	2,797	-	-
NW Main Ext.	1997	123	85	38	-	-
NW Main Ext.	1998	317	219	98	-	-
NW Main Ext.	2011	86,372			76,718	9,653
SN Pump St. Upgrade	1994	1,161	-	1,161	-	-
SN Pump St. Upgrade	1995	57,664	-	57,664	-	-
SN Pump St. Upgrade	1996	6,634	-	6,634	-	-
SN Pump St. Upgrade	1997	55	-	55	-	-
SSWC - OVEW Interconnection	1995	17,981	8,549	9,432	-	-
SSWC - OVEW Interconnection	1996	5,959	2,833	3,126	-	-
SSWC - OVEW Interconnection	1997	446	212	234	-	-
SSWC - OVEW Interconnection	2002	323	154	169	-	-
SSWC - OVEW Interconnection	2011	2,868			2,399	469
SN - SSWC Interconnection	1995	28,868	28,868	-	-	-
SN - SSWC Interconnection	1996	5,091	5,091	-	-	-
SN - SSWC Interconnection	1997	802	802	-	-	-
SN - SSWC Interconnection	2011	11,581			10,603	978

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Year	Total System Costs	Original Cost			
			Distribution	Capacity	Meters/ Services	Hydrants
NBMA - Wayside Interc.	1995	52,428	-	52,428	-	-
NBMA - Wayside Interc.	1996	4,360	-	4,360	-	-
NBMA - Wayside Interc.	1997	693	-	693	-	-
NBMA - Wayside Interc.	2011	7,250	-	-	-	7,250
Long Range System Plan	1994	5,951	-	5,951	-	-
Long Range System Plan	1995	924	-	924	-	-
Rt 873 Main Extension	1995	1,911	478	1,433	-	-
Rt 873 Main Extension	1996	168,386	42,096	126,290	-	-
Rt 873 Main Extension	1997	218	55	163	-	-
Rt 873 Main Extension	1998	124	31	93	-	-
Rt 873 Main Extension	1999	828	207	621	-	-
Rt 873 Main Extension	2011	14,910	-	-	7,455	7,455
WLVC - Independance Dr Main Ext	1997	6,939	6,939	-	-	-
WLVC - Independance Dr Main Ext	1998	418	418	-	-	-
WLVC - Independance Dr Main Ext	1999	118	118	-	-	-
WLVC - Independance Dr Main Ext	2011	3,902	-	-	319	3,584
Rt 873 Main Extension - Ph 2	1996	16,797	8,964	7,833	-	-
Rt 873 Main Extension - Ph 2	1997	94,619	50,497	44,122	-	-
Rt 873 Main Extension - Ph 2	1998	371	198	173	-	-
Rt 873 Main Extension - Ph 2	1999	47	25	22	-	-
Rt 873 Main Extension - Ph 2	2000	689	368	321	-	-
Rt 873 Main Extension - Ph 2	2011	5,922	-	-	592	5,330
Distribution Improvements	1997	4,607	4,607	-	-	-
Rt 309 Wtr Line Relocation	2007	152,153	-	152,153	-	-
Rt 309 Wtr Line Relocation	2008	3,294	-	3,294	-	-
Rt 309 Wtr Line Relocation	2009	443	-	443	-	-
Rt 309 Wtr Line Relocation	2011	13,555	-	-	7,286	6,269
DiCarlo Main Ext	2002	213	213	-	-	-
Sand Spring Improvements	2011	59,109	-	-	59,109	-
Subtotal		\$2,039,533	\$502,526	\$1,319,441	\$173,759	\$43,808
Total		\$2,887,290	\$970,116	\$1,563,252	\$278,583	\$75,339

Planning Costs thru 2011:

N. Whitehall PSC Study	2011	\$42,081
NL Master Plan	2011	2,340
Neff's Laury Ext	2011	19,037
Schnecksville Water System	2011	9,606
Distribution Mains	2011	6,816
NLSA System Planning	2011	81,689
Kidspeace Acquisition	2011	8,910
LCCC Water Sys Evaluation	2011	14,769
Lehigh Career And Technical Institute	2011	11,691
		<u>\$196,939</u>

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Cost Index		Trended Cost			
	Original	Current	Distribution	Capacity	Meters/ Services	Hydrants
<u>Financed thru Reserves:</u>						
Original Acquisition Costs:						
Penn Hills	4615	13345	\$160,690	\$68,639	\$36,714	\$0
Crestwood	4835	13345	217,231	77,656	47,209	-
Schnecksville North	4835	13345	269,189	213,582	115,006	34,123
Other Costs:						
NW Interconnection	4835	13345	7,932	-	-	-
NW Interconnection	4985	13345	365,772	-	-	-
NW Interconnection	5210	13345	12,051	-	-	-
NW Interconnection	5471	13345	510	-	-	-
NW Interconnection	9070	13345	-	-	2,261	11,303
Penn Hills System Improv.	4732	13345	-	10,861	-	-
Penn Hills System Improv.	4835	13345	-	872	-	-
Penn Hills System Improv.	9070	13345	-	-	957	1,514
Penn Hills System Improv.	9070	13345	-	-	3,022	-
Penn Hills System Improv.	9070	13345	-	-	1,270	-
Penn Hills System Improv.	6695	13345	-	171,006	-	-
Penn Hills System Improv.	7115	13345	-	2,504	-	-
Penn Hills System Improv.	7115	13345	-	16,164	-	-
Penn Hills System Improv.	7115	13345	70,520	12,548	13,067	7,570
Penn Hills System Improv.	9070	13345	-	-	1,857	-
Penn Hills System Improv.	9070	13345	-	-	1,460	-
Penn Hills System Improv.	9070	13345	-	-	1,994	-
Penn Hills System Improv.	9070	13345	-	-	1,490	-
Penn Hills System Improv.	7446	13345	-	7,836	-	-
Penn Hills System Improv.	7751	13345	-	580	-	-
Penn Hills System Improv.	7967	13345	-	503	-	-
Penn Hills System Improv.	8310	13345	-	294	-	-
Penn Hills System Improv.	9070	13345	-	-	106	-
Penn Hills System Improv.	9070	13345	-	-	1,704	-
Penn Hills System Improv.	6538	13345	9,085	-	-	-
Penn Hills System Improv.	6695	13345	169	-	-	-
Penn Hills System Improv.	7115	13345	568	-	-	-
Penn Hills System Improv.	9070	13345	-	-	1,274	1,112
Penn Hills System Improv.	9070	13345	-	-	1,273	-
Penn Hills System Improv.	9070	13345	-	-	441	-
Penn Hills System Improv.	5210	13345	16,323	-	-	-
Penn Hills System Improv.	5408	13345	10,957	-	-	-
Penn Hills System Improv.	5471	13345	12,915	-	-	-
Penn Hills System Improv.	5622	13345	2,070	-	-	-
Penn Hills System Improv.	9070	13345	-	-	2,591	3,269
Penn Hills System Improv.	5825	13345	2,064	-	-	-
Penn Hills System Improv.	5920	13345	401	-	-	-
Penn Hills System Improv.	9070	13345	-	-	332	295
Penn Hills System Improv.	5471	13345	163	144	-	-
Penn Hills System Improv.	5622	13345	4,581	4,002	-	-

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Cost Index		Trended Cost			
	Original	Current	Distribution	Capacity	Meters/ Services	Hydrants
Penn Hills System Improv.	5825	13345	2,683	2,344	-	-
Penn Hills System Improv.	9070	13345	-	-	46	414
Penn Hills System Improv.	9070	13345	-	-	1,396	-
Penn Hills System Improv.	9070	13345	-	-	1,692	-
Penn Hills System Improv.	9070	13345	-	-	639	-
Penn Hills System Improv.	7446	13345	11,768	-	-	-
Penn Hills System Improv.	7751	13345	615	-	-	-
Penn Hills System Improv.	7967	13345	67	-	-	-
Penn Hills System Improv.	9070	13345	-	-	283	831
Penn Hills System Improv.	9070	13345	-	-	1,142	-
Penn Hills System Improv.	6538	13345	3,445	-	-	-
Penn Hills System Improv.	9070	13345	-	-	486	524
Penn Hills System Improv.	9070	13345	-	-	694	-
Penn Hills System Improv.	7446	13345	7,459	-	-	-
Penn Hills System Improv.	7751	13345	174	-	-	-
Penn Hills System Improv.	7967	13345	340	-	-	-
Penn Hills System Improv.	8310	13345	1,105	-	-	-
Penn Hills System Improv.	9070	13345	-	-	365	552
Penn Hills System Improv.	9070	13345	-	-	1,586	-
Penn Hills System Improv.	9070	13345	-	-	2,963	-
Penn Hills System Improv.	9070	13345	-	-	1,566	-
Penn Hills System Improv.	9070	13345	-	-	1,532	-
Penn Hills System Improv.	8310	13345	19,517	-	-	-
Penn Hills System Improv.	8570	13345	1,563	-	-	-
Penn Hills System Improv.	8799	13345	1,127	-	-	-
Penn Hills System Improv.	9070	13345	-	-	2,407	2,451
Penn Hills System Improv.	#N/A		\$1,213,055	\$589,533	\$250,823	\$63,958

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Cost Index		Trended Cost			
	Original	Current	Distribution	Capacity	Meters/ Services	Hydrants
Penn Hills System Improv.	#N/A					
Penn Hills System Improv.	4985	13345	\$9,102	\$0	\$0	\$0
Penn Hills System Improv.	5210	13345	4,354	-	-	-
Penn Hills System Improv.	5408	13345	2,098	-	-	-
Penn Hills System Improv.	5471	13345	2,073	-	-	-
Penn Hills System Improv.	5622	13345	2,018	-	-	-
Penn Hills System Improv.	5825	13345	974	-	-	-
Penn Hills System Improv.	6342	13345	2,683	-	-	-
Penn Hills System Improv.	6538	13345	867	-	-	-
Penn Hills System Improv.	7115	13345	1,594	-	-	-
Penn Hills System Improv.	9070	13345	\$0	\$0	\$2,759	-
Penn Hills System Improv.	5471	13345	22,082	-	-	-
Penn Hills System Improv.	5622	13345	11,374	-	-	-
Penn Hills System Improv.	5825	13345	8,538	-	-	-
Penn Hills System Improv.	5920	13345	4,803	-	-	-
Penn Hills System Improv.	6060	13345	11,727	-	-	-
Penn Hills System Improv.	9070	13345	-	-	10,892	4,149
Penn Hills System Improv.	4985	13345	-	1,723,552	-	-
Penn Hills System Improv.	5210	13345	-	758	-	-
Penn Hills System Improv.	4985	13345	23,698	-	-	-
Penn Hills System Improv.	5210	13345	1,324	-	-	-
Penn Hills System Improv.	5408	13345	3,166	-	-	-
Penn Hills System Improv.	5471	13345	1,183	-	-	-
Penn Hills System Improv.	5622	13345	6,860	-	-	-
Penn Hills System Improv.	5210	13345	-	5,553	-	-
Penn Hills System Improv.	5408	13345	-	63,870	-	-
Penn Hills System Improv.	5471	13345	-	85,643	-	-
Penn Hills System Improv.	5622	13345	-	4,299	-	-
Penn Hills System Improv.	5471	13345	694,136	311,333	-	-
Penn Hills System Improv.	5622	13345	14,807	6,639	-	-
Penn Hills System Improv.	5825	13345	195	87	-	-
Penn Hills System Improv.	5920	13345	494	221	-	-
Penn Hills System Improv.	9070	13345	-	-	112,880	14,203
Penn Hills System Improv.	5408	13345	-	2,865	-	-
Penn Hills System Improv.	5471	13345	-	140,651	-	-
Penn Hills System Improv.	5622	13345	-	15,747	-	-
Penn Hills System Improv.	5825	13345	-	126	-	-
Penn Hills System Improv.	5471	13345	20,852	23,006	-	-
Penn Hills System Improv.	5622	13345	6,725	7,420	-	-
Penn Hills System Improv.	5825	13345	486	536	-	-
Penn Hills System Improv.	6538	13345	314	345	-	-
Penn Hills System Improv.	9070	13345	-	-	3,530	690
Penn Hills System Improv.	5471	13345	70,413	-	-	-
Penn Hills System Improv.	5622	13345	12,084	-	-	-
Penn Hills System Improv.	5825	13345	1,837	-	-	-
Penn Hills System Improv.	9070	13345	-	-	15,601	1,439

Exhibit 4
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Capital Costs - Thru 2011

	Cost Index		Trended Cost			
	Original	Current	Distribution	Capacity	Meters/ Services	Hydrants
Penn Hills System Improv.	5471	13345	-	127,880	-	-
Penn Hills System Improv.	5622	13345	-	10,349	-	-
Penn Hills System Improv.	5825	13345	-	1,588	-	-
Penn Hills System Improv.	9070	13345	-	-	-	10,667
Penn Hills System Improv.	5408	13345	-	14,686	-	-
Penn Hills System Improv.	5471	13345	-	2,254	-	-
Penn Hills System Improv.	5471	13345	1,166	3,495	-	-
Penn Hills System Improv.	5622	13345	99,921	299,767	-	-
Penn Hills System Improv.	5825	13345	126	373	-	-
Penn Hills System Improv.	5920	13345	70	210	-	-
Penn Hills System Improv.	6060	13345	456	1,368	-	-
Penn Hills System Improv.	9070	13345	-	-	10,969	10,969
WLVC - Independance Dr Main Ext	5825	13345	15,897	-	-	-
WLVC - Independance Dr Main Ext	5920	13345	942	-	-	-
WLVC - Independance Dr Main Ext	6060	13345	260	-	-	-
WLVC - Independance Dr Main Ext	9070	13345	-	-	469	5,273
Rt 873 Main Extension - Ph 2	5622	13345	21,277	18,593	-	-
Rt 873 Main Extension - Ph 2	5825	13345	115,686	101,081	-	-
Rt 873 Main Extension - Ph 2	5920	13345	446	390	-	-
Rt 873 Main Extension - Ph 2	6060	13345	55	48	-	-
Rt 873 Main Extension - Ph 2	6221	13345	789	689	-	-
Rt 873 Main Extension - Ph 2	9070	13345	-	-	871	7,842
Distribution Improvements	5825	13345	10,554	-	-	-
Rt 309 Wtr Line Relocation	7967	13345	-	254,862	-	-
Rt 309 Wtr Line Relocation	8310	13345	-	5,290	-	-
Rt 309 Wtr Line Relocation	8570	13345	-	690	-	-
Rt 309 Wtr Line Relocation	9070	13345	-	-	10,720	9,224
DiCarlo Main Ext	6538	13345	435	-	-	-
Sand Spring Improvements	9070	13345	-	-	86,971	-
Subtotal			\$1,210,943	\$3,236,263	\$255,662	\$64,457
Total			\$2,423,998	\$3,825,795	\$506,484	\$128,415

Planning Costs thru 2011:

N. Whitehall PSC Study	9070	13345	\$61,916
NL Master Plan	9070	13345	3,443
Neff's Laury Ext	9070	13345	28,010
Schnecksville Water System	9070	13345	14,134
Distribution Mains	9070	13345	10,029
NLSA System Planning	9070	13345	120,194
Kidspeace Acquisition	9070	13345	13,110
LCCC Water Sys Evaluation	9070	13345	21,730
Lehigh Career And Technical Institute	9070	13345	17,202
			<u>\$289,768</u>

Exhibit 5
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Assets							
Meter Installation for New Customers	2012	\$1,172				Excluded Contribution	
Meter Installation for New Customers	2013	1,558				Excluded Contribution	
Meter Installation for New Customers	2014	1,138				Excluded Contribution	
Meter Installation for New Customers	2021	58				Excluded Contribution	
Distribution Mains	2014	98				Excluded Repairs	
Distribution Mains	2015	875				Excluded Repairs	
Crestwood Alt. Water Supply	2012		\$1,548	9308	13345		\$2,220
Crestwood Alt. Water Supply	2014		3,244	9806	13345		4,415
Crestwood Alt. Water Supply	2015		37,444	10039	13345		49,773
Crestwood Alt. Water Supply	2016		47,074	10339	13345		60,762
Crestwood Alt. Water Supply	2017		151,987	10738	13345		188,892
Crestwood Alt. Water Supply	2018		205,643	11062	13345		248,088
Crestwood Alt. Water Supply	2019		108	11281	13345		128
Meter Installation for Existing Customers	2012	\$1,972		9308	13345	\$2,827	
Meter Installation for Existing Customers	2013	1,010		9547	13345	1,412	
Meter Installation for Existing Customers	2014	2,447		9806	13345	3,330	
System Improvements	2020		3,209	11466	13345		3,735
System Improvements	2021		34,710	12149	13345		38,128
System Improvements	2022		10,702	13007	13345		10,981
		\$5,429	\$495,670			\$7,569	\$607,121

Exhibit 6
Lehigh County Authority
Suburban Water - Washington Township
Lehigh County, Pennsylvania
Assets

	<u>Total Costs</u>	<u>Distribution</u>	<u>Transmission</u>	<u>Capacity</u>	<u>Metering</u>	<u>Hydrants</u>	<u>Services</u>
System Improvements	\$549,264	\$0	\$0	\$549,264	\$0	\$0	\$0
Slatington Interconnection	85,592	-	85,592	-	-	-	-
System Acquisition	23,817	20,483	-	-	1,429	715	1,191
WT Main Replacement	2,594,205	28.8%	62.4%			2.9%	5.9%
		747,131	1,618,784	-	-	75,232	153,058
Total	\$3,252,878	\$767,614	\$1,704,377	\$549,264	\$1,429	\$75,947	\$154,249

Exhibit 7
Lehigh County Authority
Suburban Water - Washington Township
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Assets							
Meter Installation for New Customers	2012	\$218				Excluded Contribution	
Meter Installation for New Customers	2013	598				Excluded Contribution	
Meter Installation for New Customers	2014	326				Excluded Contribution	
Distribution Mains	2015	50				Excluded Repairs	
Meter Installation for Existing Customers	2012	1,685		9308	13345	\$2,416	
Meter Installation for Existing Customers	2013	709		9547	13345	991	
Meter Installation for Existing Customers	2014	970		9806	13345	1,320	
		\$3,364	\$0			\$4,727	\$0

Exhibit 8
Lehigh County Authority
Suburban Water - Heidelberg Heights
Lehigh County, Pennsylvania
Assets

	Total Costs	Capacity					
		Land	PS Structure	Pumping	Purification	Reservoir	Wells
Acquisition	\$434,494	9.6%	7.9%	9.5%	0.5%	26.4%	5.3%
		\$41,711	\$34,325	\$41,277	\$2,172	\$114,706	\$23,028
Improvements Plan	326,700	-	91,800	-	-	143,800	14,490
Total	\$761,194	\$41,712	\$126,125	\$41,277	\$2,172	\$258,507	\$37,518

Distribution	Metering	Services	Hydrants
26.0%	3.5%	10.0%	1.3%
\$112,968	\$15,207	\$43,449	\$5,648
23,790	52,820	-	-
\$136,758	\$68,027	\$43,449	\$5,648

Exhibit 9
Lehigh County Authority
Suburban Water - Heidelberg Heights
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Assets							
Meter Installation for New Customers	2012	\$109				Excluded Contribution	
Meter Installation for New Customers	2013	204				Excluded Contribution	
Meter Installation for New Customers	2014	99				Excluded Contribution	
System Improvements	2016		10,210	10339	13345		13,179
System Improvements	2017		854	10738	13345		1,061
System Improvements	2018		4,644	11062	13345		5,603
System Improvements	2019		137	11281	13345		162
		\$0	\$15,845			\$0	\$20,005

Exhibit No. 10
Lehigh County Authority
Suburban Water - Small Water Systems
Lehigh County, Pennsylvania
Capacity Assets

			Placed in Service	Original Cost	Cost Index		Trended Current
					Original	Current	Replacement Cost
Beverly Hills							
Acquisition Cost							
Land	Apr	2005		\$1,794			\$1,794
Pump Station Structure	Apr	2005		4,341	7355	13345	7,875
Electrical/Pumping	Apr	2005		2,550	7355	13345	4,627
Purification	Apr	2005		1,129	7355	13345	2,048
Well	Apr	2005		4,498	7355	13345	8,161
Improvements	Oct	2005		6,180	7563	13345	10,905
				\$20,491			\$35,409
Mill Creek							
Acquisition Cost							
Land	Mar	2005		\$1,344			\$1,344
Pump Station Structure	Mar	2005		1,440	7309	13345	2,629
Electrical/Pumping	Mar	2005		1,357	7309	13345	2,479
Purification	Mar	2005		239	7309	13345	436
Well	Mar	2005		3,410	7309	13345	6,226
				\$7,790			\$13,113
Pine Lakes							
Acquisition Cost							
Pump Station Structure	Mar	2002		\$1,405	6502	13345	\$2,884
Electrical/Pumping	Mar	2002		2,355	6502	13345	4,834
Purification	Mar	2002		509	6502	13345	1,045
Wells	Mar	2002		2,248	6502	13345	4,614
				\$6,517			\$13,376
Clearview Farms Estates							
Acquisition Cost							
Land	Feb	2005		\$454			\$454
Pump Station Structure	Feb	2005		1,473	7298	13345	2,693
Electrical/Pumping	Feb	2005		1,060	7298	13345	1,939
Purification	Feb	2005		454	7298	13345	829
Well	Feb	2005		4,883	7298	13345	8,929
				\$8,323			\$14,843
Madison Park North							
Acquisition Cost							
Land	Jul	2010		\$17,962			\$17,962
Pump Station Structure	Jul	2010		39,690	8844	13345	59,890
Electrical/Pumping	Jul	2010		46,932	8844	13345	70,817
Purification	Jul	2010		2,897	8844	13345	4,371
Reservoir	Jul	2010		80,828	8844	13345	121,964
Well	Jul	2010		10,719	8844	13345	16,174
				\$199,028			\$291,178

Exhibit No. 10
Lehigh County Authority
Suburban Water - Small Water Systems
Lehigh County, Pennsylvania
Capacity Assets

	Placed in Service	Original Cost	Cost Index		Trended Current Replacement Cost	
			Original	Current		
Upper Milford Central						
Acquisition Cost						
Land	Apr	2007	\$9,422		\$9,422	
Pump Station Structure	Apr	2007	16,912	Replaced		
Electrical/Pumping	Apr	2007	6,523	Replaced		
Purification	Apr	2007	2,416	7865	13345	4,099
Reservoir	Apr	2007	27,059	7865	13345	45,912
Well	Apr	2007	21,985	7865	13345	37,304
			\$60,882			\$96,737
			\$303,030			\$464,657

Exhibit No. 11
Lehigh County Authority
Suburban Water - Small Water Systems
Lehigh County, Pennsylvania
Distribution Assets

			Placed in Service	Original Cost	Cost Index		Trended Current
					Original	Current	Replacement Cost
Beverly Hills							
Acquisition Cost							
Distribution	Apr	2005		\$30,508	7355	13345	\$55,355
Metering	Apr	2005		1,975	7355	13345	3,583
				\$32,483			\$58,938
Mill Creek							
Acquisition Cost							
Distribution	Mar	2005		\$13,127	7309	13345	\$23,968
Metering	Mar	2005		559	7309	13345	1,021
				\$13,686			\$24,989
Pine Lakes							
Acquisition Cost							
Distribution	Mar	2002		\$3,747	6502	13345	\$7,691
Metering	Mar	2002		2,275	6502	13345	4,669
Services	Mar	2002		843	6502	13345	1,730
				\$6,865			\$14,090
Clearview Farms Estates							
Acquisition Cost							
Distribution	Feb	2005		\$19,663	7298	13345	\$35,955
Metering	Feb	2005		777	7298	13345	1,422
				\$20,440			\$37,377
Madison Park North							
Acquisition Cost							
Distribution	Jul	2010		\$37,950	8844	13345	\$57,264
Metering	Jul	2010		15,065	8844	13345	22,732
Services	Jul	2010		27,812	8844	13345	41,966
Hydrants	Jul	2010		9,850	8844	13345	14,863
				\$90,677			\$136,825
Upper Milford Central							
Acquisition Cost							
Distribution	Apr	2007		\$148,823	7865	13345	\$252,516
Metering	Apr	2007		8,456	7865	13345	14,348
				\$157,279			\$266,864
				\$321,431			\$539,084

Exhibit 12
Lehigh County Authority
Suburban Water - Small Water Systems
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Beverly Hills							
Meter Installation for New Customers	2012	\$495				Excluded Contribution	
Meter Installation for New Customers	2013	105				Excluded Contribution	
System Improvements	2018		\$199	11062	13345		\$240
Mill Creek							
Meter Installation for Existing Customers	2012	\$92		9308	13345	\$132	
Meter Installation for Existing Customers	2013	99		9547	13345	138	
Pine Lakes							
Meter Installation for New Customers	2012	\$218				Excluded Contribution	
Meter Installation for New Customers	2013	420				Excluded Contribution	
Meter Installation for New Customers	2014	396				Excluded Contribution	
Meter Installation for Existing Customers	2017	428		10738	13345	\$532	
Pump Station Improvements	P 2012		\$151	9308	13345		\$216
Pump Station Improvements	2014		8,024	9806	13345		10,921
Pump Station Improvements	2015		57,043	10039	13345		75,827
Pump Station Improvements	2016		60,892	10339	13345		78,598
Pump Station Improvements	2017		216,738	10738	13345		269,366
Pump Station Improvements	2018		347,408	11062	13345		419,113
Pump Station Improvements	2019		1,568	11281	13345		1,855
Pump Station Improvements	2020		63	11466	13345		73
Clearview Farms Estates							
Meter Installation for New Customers	2012	\$218				Excluded Contribution	
Meter Installation for Existing Customers	2012	198		9308	13345	\$284	
Meter Installation for Existing Customers	2013	291		9547	13345	407	
Meter Installation for Existing Customers	2014	168		9806	13345	229	
Meter Installation for Existing Customers	2018	90		11062	13345	109	
Meter Installation for Existing Customers	2019	46		11281	13345	54	
System Improvements	2018		\$96	11062	13345		\$115
Madison Park North							
System Improvements	P 2012		\$26,350	9308	13345		\$37,778
System Improvements	2012		807	9308	13345		1,157
System Improvements	2013		337	9547	13345		471
System Improvements	2014		164	9806	13345		223
System Improvements	2018		298	11062	13345		359
System Improvements	2019		333	11281	13345		393

Exhibit 12
Lehigh County Authority
Suburban Water - Small Water Systems
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Upper Milford Central							
Meter Installation for New Customers	2012	\$109				Excluded Contribution	
Meter Installation for New Customers	2014	643				Excluded Contribution	
Meter Installation for Existing Customers	2012	300		9308	13345	\$430	
Meter Installation for Existing Customers	2014	845		9806	13345	1,150	
Meter Installation for Existing Customers	2022	871		13007	13345	893	
System Improvements	2016		\$200	10339	13345		\$258
System Improvements	2017		888	10738	13345		1,104
System Improvements	2018		831	11062	13345		1,003
System Improvements	2019		163	11281	13345		193
System Improvements	2020		2,748	11466	13345		3,199
System Improvements	2021		617	12149	13345		677
System Improvements	2022		3,191	13007	13345		3,274
Pump Station Replacement	2017		23,257	10738	13345		28,905
Pump Station Replacement	2018		100,977	11062	13345		121,818
Pump Station Replacement	2019		98,459	11281	13345		116,469
Pump Station Replacement	2020		1,339,975	11466	13345		1,559,592
Pump Station Replacement	2021		929,846	12149	13345		1,021,390
Pump Station Replacement	2022		141,629	13007	13345		145,312
		\$3,428	\$3,363,252			\$4,359	\$3,899,899

Exhibit 13
Lehigh County Authority
Suburban Water - General System Assets
Lehigh County, Pennsylvania

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Distribution System Improvements							
	Prior to 2012	\$14,427		9308	13345	\$20,684	
	2015	1,899		10039	13345	2,525	
	2016	2,525		10339	13345	3,259	
	2021	455		12149	13345	500	
Emergency Back Up Power							
	Prior to 2012		\$1,158	9308	13345		\$1,660
	2012		54,441	9308	13345		78,051
	2013		1,020,211	9547	13345		1,426,117
	2014		195,133	9806	13345		265,561
Meter/Backflow Upgrade							
	Prior to 2012	1,120,640		9308	13345	1,606,654	
	2012	473,900		9308	13345	679,427	
	2013	13,556		9547	13345	18,950	
	2014	26,748		9806	13345	36,403	
Hydro Pneumatic Pump Station Upgrade							
	2012		800	9308	13345		1,147
Non-Residential Meter Replacement/Upgrade							
	2012	59,196		9308	13345	84,869	
	2014	4,166		9806	13345	5,670	
	2015	1,486		10039	13345	1,975	
	2016	1,650		10339	13345	2,130	
	2017	743,117		10738	13345	923,559	
	2018	973,707		11062	13345	1,174,680	
	2019	17,939		11281	13345	21,220	
	2020	7,662		11466	13345	8,918	
	2021	1,361		12149	13345	1,495	
	2022	97		13007	13345	99	
Additional Water Supply - Small Systems							
	2016		2,814	10339	13345		3,632
	2017		7,828	10738	13345		9,728
	2018		38,506	11062	13345		46,453
	2019		67,899	11281	13345		80,319
	2020		121,501	11466	13345		141,415
	2021		139,044	12149	13345		152,733
	2022		129	13007	13345		133
Macungie Interconnection							
	2016	8,168		10339	13345	10,543	
Commercial Meter Replacement							
	2021	8,902		12149	13345	9,779	
	2022	159,196		13007	13345	163,336	

Exhibit 13
Lehigh County Authority
Suburban Water - General System Assets
Lehigh County, Pennsylvania

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Computer System Improvements	Prior to 2012	12,324	12,324	9308	13345	17,669	17,669
	2013	4,357	4,357	9547	13345	6,090	6,090
	2014	8,596	8,596	9806	13345	11,698	11,698
	2015	310	310	10039	13345	412	412
	2016	2,851	2,851	10339	13345	3,680	3,680
	2017	11,344	11,344	10738	13345	14,099	14,099
	2018	36,969	36,969	11062	13345	44,599	44,599
	2019	34,446	34,446	11281	13345	40,747	40,747
	2020	7,523	7,523	11466	13345	8,755	8,755
	2021	18,510	18,510	12149	13345	20,333	20,333
	2022	14,596	14,596	13007	13345	14,976	14,976
GIS Conversion/Updates	2012	22,693	22,693	9308	13345	32,535	32,535
	2013	12,641	12,641	9547	13345	17,671	17,671
	2014	4,198	4,198	9806	13345	5,713	5,713
	2015	2,427	2,427	10039	13345	3,226	3,226
	2016	10,713	10,713	10339	13345	13,828	13,828
	2017	65,066	65,066	10738	13345	80,865	80,865
	2018	55,008	55,008	11062	13345	66,361	66,361
	2019	43,277	43,277	11281	13345	51,193	51,193
	2020	23,444	23,444	11466	13345	27,286	27,286
	2021	9,224	9,224	12149	13345	10,132	10,132
	2022	37,292	37,292	13007	13345	38,262	38,262
GIS Mobile Technology	2012	68,156	68,156	9308	13345	97,715	97,715
	2013	18,020	18,020	9547	13345	25,189	25,189
	2014	95	95	9806	13345	130	130
	2018	23	23	11062	13345	27	27
Document Management System	2019	3,343	3,343	11281	13345	3,955	3,955
	2020	4,796	4,796	11466	13345	5,582	5,582
Operations Center Improvements	2013	6,226	6,226	9547	13345	8,703	8,703
	2015	7,381	7,381	10039	13345	9,811	9,811
	2016	27,388	27,388	10339	13345	35,351	35,351
	2017	39,427	39,427	10738	13345	49,000	49,000
	2018	27,030	27,030	11062	13345	32,609	32,609
	2019	67,675	67,675	11281	13345	80,055	80,055
	2020	3,315	3,315	11466	13345	3,858	3,858
	2021	47,068	47,068	12149	13345	51,702	51,702
	2022	52,920	52,920	13007	13345	54,296	54,296

Exhibit 13
Lehigh County Authority
Suburban Water - General System Assets
Lehigh County, Pennsylvania

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
GIS Web Map Update							
	2014	21,641	21,641	9806	13345	29,452	29,452
	2015	1,921	1,921	10039	13345	2,553	2,553
	2017	164	164	10738	13345	204	204
	2018	1,317	1,317	11062	13345	1,588	1,588
	2019	2,909	2,909	11281	13345	3,441	3,441
	2020	711	711	11466	13345	828	828
	2021	2,041	2,041	12149	13345	2,242	2,242
	2022	1,247	1,247	13007	13345	1,279	1,279
CMMS Upgrade & Expansion							
	2014	124,553	124,553	9806	13345	169,508	169,508
	2015	118,793	118,793	10039	13345	157,910	157,910
	2016	305	305	10339	13345	394	394
	2017	96	96	10738	13345	119	119
	2019	48,657	48,657	11281	13345	57,557	57,557
	2020	10,578	10,578	11466	13345	12,312	12,312
	2021	31,336	31,336	12149	13345	34,421	34,421
	2022	17,883	17,883	13007	13345	18,348	18,348
Main Office Mezzanine							
	2016	21,333	21,333	10339	13345	27,536	27,536
	2017	17,438	17,438	10738	13345	21,672	21,672
	2018	32,485	32,485	11062	13345	39,190	39,190
Main Office Parking Lot Lighting							
	2016	1,060	1,060	10339	13345	1,369	1,369
	2017	10,923	10,923	10738	13345	13,575	13,575
Main Office Bullet Proof Glass							
	2016	1,299	1,299	10339	13345	1,677	1,677
	2017	26,115	26,115	10738	13345	32,457	32,457
Main Office Natural Gas							
	2018	5,304	5,304	11062	13345	6,399	6,399
	2019	9,712	9,712	11281	13345	11,488	11,488
Water Meter Reading Equipment							
	2018	1,482		11062	13345	1,788	
	2019	2,577,742		11281	13345	3,049,264	
	2020	420,434		11466	13345	489,342	
	2021	37,546		12149	13345	41,243	
	2022	1,343		13007	13345	1,378	
Disaster Recovery/Security							
	2019	44,314	44,314	11281	13345	52,421	52,421
	2020	3,290	3,290	11466	13345	3,829	3,829
	2021	3,191	3,191	12149	13345	3,505	3,505
	2022	25,542	25,542	13007	13345	26,206	26,206
Accounting Area Renovations							
	2019	13,189	13,189	11281	13345	15,602	15,602
	2020	719	719	11466	13345	836	836
	2021	532	532	12149	13345	585	585

Exhibit 13
Lehigh County Authority
Suburban Water - General System Assets
Lehigh County, Pennsylvania

	Original Cost		Cost Index		Trended Cost	
	Year	Distribution Capacity	Original	Current	Distribution Capacity	
Fixed Base Meter Reading System						
	2020	15,657	11466	13345	18,223	
	2021	28,735	12149	13345	31,564	
	2022	36,258	13007	13345	37,201	

Exhibit No. 14
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Contributions

Capacity Part**Transmission**

	Year	Original Amount	Cost Index		Trended Amount
			Original	Current	
Balance as of 12/31/2004	2004	\$7,558,226	7115	13345	\$14,176,155
2005 Additions	2005	445,294	7446	13345	798,064
2006 Additions	2006	2,555,514	7751	13345	4,399,721
2007 Additions	2007	827,297	7967	13345	1,385,751
2008 Additions	2008	1,868,231	8310	13345	3,000,216
2009 Additions	2009	143,563	8570	13345	223,551
2010 Additions	2010	406,861	8799	13345	617,072
2011 Additions	2011	156,081	9070	13345	229,651
CIA 2004	2004	2,331,840	7115	13345	\$4,373,583
CIA 2005	2005	44,051	7446	13345	78,949
CIA 2006	2006	158,364	7751	13345	272,649
CIA 2007	2007	51,955	7967	13345	87,026
CIA 2008	2008	371,739	8310	13345	596,980
CIA 2009	2009	108,098	8570	13345	168,326
CIA 2010	2010	32,510	8799	13345	49,307
CIA 2011	2011	21,355	9070	13345	31,421
		\$17,080,979			\$30,488,420

Land

CIA 2010	2010	\$78,590	8799	13345	\$119,195
CIA 2011	2011	98,060	9070	13345	144,281
		\$176,650			\$263,476

Purification

CIA 2008	2008	\$9,752	8310	13345	\$15,661
CIA 2009	2009	4,699	8570	13345	7,317
CIA 2010	2010	14	8799	13345	21
		\$14,465			\$22,999

Wells

CIA 2004	2004	\$5,130	7115	13345	\$9,622
CIA 2008	2008	140,848	8310	13345	226,190
CIA 2009	2009	67,866	8570	13345	105,678
CIA 2010	2010	157,174	8799	13345	238,380
		\$371,018			\$579,870

Reservoir

CIA 2004	2004	\$352,860	7115	13345	\$661,822
		\$352,860			\$661,822

Exhibit No. 14
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Contributions

Distribution Part

	Year	Original Amount	Cost Index		Trended Amount
			Original	Current	
Pump Station Structure					
Balance as of 12/31/2004	2004	\$147,820	7115	13345	\$277,250
2005 Additions	2005	185,603	7446	13345	332,641
CIA 2004	2004	75,428	7115	13345	\$141,472
CIA 2005	2005	18,390	7446	13345	32,959
CIA 2008	2008	137,576	8310	13345	220,935
CIA 2009	2009	66,289	8570	13345	103,223
CIA 2010	2010	503,859	8799	13345	764,185
		\$1,134,965			\$1,872,665
Electrical & Pumping					
Balance as of 12/31/2004	2004	\$411,531	7115	13345	\$771,865
2005 Additions	2005	516,970	7446	13345	926,523
CIA 2004	2004	177,439	7115	13345	\$332,803
CIA 2005	2005	51,162	7446	13345	91,693
CIA 2008	2008	161,007	8310	13345	258,563
CIA 2009	2009	77,579	8570	13345	120,803
CIA 2010	2010	284,124	8799	13345	430,921
		\$1,679,812			\$2,933,171
Distribution					
Balance as of 12/31/2004	2004	\$12,412,684	7115	13345	\$23,281,142
2005 Additions	2005	1,062,813	7446	13345	1,904,792
2006 Additions	2006	1,369,124	7751	13345	2,357,163
2007 Additions	2007	877,245	7967	13345	1,469,416
2008 Additions	2008	2,029,447	8310	13345	3,259,115
2009 Additions	2009	487,947	8570	13345	759,813
2010 Additions	2010	701,058	8799	13345	1,063,270
2011 Additions	2011	269,871	9070	13345	397,077
CIA 2004	2004	1,494,520	7115	13345	\$2,803,111
CIA 2005	2005	105,157	7446	13345	188,464
CIA 2006	2006	82,880	7751	13345	142,691
CIA 2007	2007	55,082	7967	13345	92,264
CIA 2008	2008	161,708	8310	13345	259,689
CIA 2009	2009	56,561	8570	13345	88,075
CIA 2010	2010	76,652	8799	13345	116,255
CIA 2011	2011	36,880	9070	13345	54,264
		\$21,279,629			\$38,236,600

Exhibit 15
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Contributions - Thru 2011

<u>Source</u>	<u>Month</u>	<u>Year</u>	<u>Original Contribution</u>			
			<u>Distribution</u>	<u>Capacity</u>	<u>Meters/ Services</u>	<u>Hydrants</u>
Plan Review & Inspection Costs *	Jan	2010	\$66,803	\$6,287	\$42,834	\$0
Parkland School District	Sep	2004	25,920	-	1,080	-
Sand Spring Water Co.	Jun	2005	161,070	-	10,620	5,310
Western Lehigh Valley Corp	Sep	1997	84,000	94,000	18,000	4,000
Rt 309 Wtr Line Relocation	Mar	2010	-	142,459	6,658	5,729
			<u>\$337,793</u>	<u>\$242,746</u>	<u>\$79,192</u>	<u>\$15,039</u>

Exhibit 15
Lehigh County Authority
Suburban Water - North Whitehall Division
Lehigh County, Pennsylvania
Summary of Contributions - Thru 2011

<u>Source</u>	Cost Index		Trended Contribution			
	Original	Current	Distribution	Capacity	Meters/	Hydrants
					Services	
Plan Review & Inspection Costs *	8660	13345	\$102,943	\$9,688	\$66,007	\$0
Parkland School District	7298	13345	47,397	-	1,975	-
Sand Spring Water Co.	7415	13345	289,883	-	19,113	9,557
Western Lehigh Valley Corp	5851	13345	191,588	214,396	41,055	9,123
Rt 309 Wtr Line Relocation	8671	13345	-	219,250	10,247	8,817
			\$631,810	\$443,334	\$138,396	\$27,497

Exhibit 16
Lehigh County Authority
Suburban Water - Washington Township
Lehigh County, Pennsylvania
Contributions

	<u>Total Costs</u>	<u>Distribution</u>	<u>Transmission</u>	<u>Capacity</u>	<u>Metering</u>	<u>Hydrants</u>	<u>Services</u>
Grant for Improv/ Interconnection	\$475,449	\$0	\$60,521	\$414,928	\$0	\$0	\$0
Grant for Main Replacement	570,000	28.8%	62.4%			2.9%	5.9%
		164,160	355,680	-	-	16,530	33,630
WT Reimbursement	84,945	28.8%	62.4%			2.9%	5.9%
		164,160	355,680	-	-	16,530	33,630
Total	\$1,130,394	\$328,321	\$771,882	\$414,928	\$0	\$33,060	\$67,260

	Total Costs	Capacity						
		Land	PS Structure	Pumping	Purification	Reservoir	Wells	
Grant (Dec. 2004)	\$450,000	5.5%	16.6%	5.4%	0.3%	34.0%	4.9%	
		\$24,659	\$74,562	\$24,402	\$1,284	\$152,823	\$22,180	
				Distribution	Metering	Services	Hydrants	
				18.0%	8.9%	5.7%	0.7%	
				\$80,848	\$40,216	\$25,686	\$3,339	

Exhibit No. 18
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
Debt Service Summary

Interest Paid

Series	Total	Capacity	Distribution
Pennworks Note	\$205,615	\$176,414	\$29,202
PENNVEST (Meter Replacement Project)	104,274	89,465	14,809
2010 A Series Bonds	3,677,098	3,154,875	522,223
2015 Water Revenue Bonds	357,390	306,633	50,757
2015A Water Revenue Bonds	1,164,334	998,975	165,359
2017 Water Revenue Bonds	2,939,678	2,522,184	417,494
2021 Water Revenue Bonds	1,256,304	1,077,884	178,421
2022 Water Bonds	25,992	12,499	13,493
Total	\$9,730,684	\$8,338,928	\$1,391,756

Outstanding Principal

Series	Total	Capacity	Distribution
Pennworks Note	Retired 2021		
PENNVEST (Meter Replacement Project)	\$756,157	\$648,768	\$107,390
2010 A Series Bonds	Retired 2021		
2015 Water Revenue Bonds	Retired 2021		
2015A Water Revenue Bonds	Retired 2021		
2017 Water Revenue Bonds	13,910,000	11,934,498	1,975,502
2021 Water Revenue Bonds	16,000,000	13,727,675	2,272,325
2022 Water Bonds	12,255,000	5,893,312	6,361,688
Total	\$42,921,157	\$32,204,252	\$10,716,905

Financing Costs

Series	Total	Original Cost		Trended Cost	
		Capacity	Distribution	Capacity	Distribution
2022 Water Bonds					
Bond Counsel Legal Fees	\$19,000				
Financial Advisor Fee	35,000				
Bank Counsel Fee	4,000				
Consulting Engineer's Report	1,879				
Trustee Fees	3,750				
	\$63,629	\$30,599	\$33,031	\$31,005	\$33,469

Exhibit 19
Lehigh County Authority
Suburban Water - Washington Township
Lehigh County, Pennsylvania
Debt

	Total	Distribution	Transmission	Capacity	Metering	Hydrants	Services
Outstanding Debt	\$0	28.8%	62.4%			2.9%	5.9%
		\$0	\$0			\$0	\$0

Interest Expense	2001	\$298
	2002	38,229
	2003	52,521
	2004	50,201
	2005	47,520
	2006	45,129
	2007	47,316
	2008	50,906
	2009	48,062
	2010	45,118
	2011	45,399
	2012 Thru 6/1	13,474
	2016	19,803
	2017	16,757
	2018	13,626
	2019	10,398
	2020	7,082
	2021	3,684
	2022	520
		<u>\$556,044</u>

	Total	Distribution	Transmission	Capacity	Metering	Hydrants	Services
Allocation of Interest	\$556,044	28.8%	62.4%			2.9%	5.9%
		\$160,141	\$346,971			\$16,125	\$32,807

Exhibit No. 20
Lehigh County Authority
Suburban Water - Central Lehigh Division
Lehigh County, Pennsylvania
System Capacity Calculation

	<u>Capacity (GPD)</u>
Central Lehigh Division	
Five Year Daily Average Capacity plus 17.3% (5 years growth)	11,743,860
North Whitehall Division	
Five Year Daily Average Capacity plus 53.15% (5 years growth)	553,623
Washington Township	
Total Supply Available in gallons Max Day per Slatington Agmt	140,000
Heidelberg Heights (1)	
Five Year Daily Average Capacity	30,649
Beverly Hills (1)	
Five Year Daily Average Capacity	7,346
Mill Creek (1)	
Five Year Daily Average Capacity	5,135
Pine Lakes (1)	
Five Year Daily Average Capacity	9,719
Clearview Farms Estates (1)	
Five Year Daily Average Capacity	9,054
Madison Park North (1)	
Five Year Daily Average Capacity	14,900
Upper Milford Central (1)	
Five Year Daily Average Capacity	20,603

(1) These communities have been fully developed.

Exhibit A1
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

A. Capacity Part	Exhibit Reference	Original Cost	Trended Cost
Pump Station Structure	A2	\$25,608	\$51,051
Electrical/Pumping	A2	56,752	113,139
Purification	A2	5,695	11,354
Reservoir	A2	41,832	83,396
Wells	A2	66,542	132,657
Additional Assets	A3	1,112,500	1,526,457
		<u>\$1,308,929</u>	<u>\$1,918,053</u>
Less: Contributions		-	-
Net Capital		<u>\$1,308,929</u>	<u>\$1,918,053</u>
Financing Costs for Capacity Part		-	-
Total Cost of Capacity Part		<u>\$1,308,929</u>	<u>\$1,918,053</u>
Plus: Interest Paid On Debt		-	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<u>\$1,308,929</u>	<u>\$1,918,053</u>
Total Capacity	A4	128,160	128,160
Capacity Tapping Fee per Gallon		\$10.21	\$14.97
Gallon per EDU for Capacity Part (1)		182.0	182.0
Capacity Tapping Fee per EDU		\$1,858.81	\$2,723.83

Exhibit A1
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

		Exhibit	
B. <u>Distribution Part</u>		Original Cost	Trended Cost
Distribution	A2	\$84,343	\$168,144
Services	A2	14,563	29,032
Metering	A2	3,172	6,324
Additional Assets	A3	1,069	1,533
		<u>\$103,147</u>	<u>\$205,033</u>
Less: Contributions		-	-
Net Capital		<u>\$103,147</u>	<u>\$205,033</u>
Financing Costs for Distribution Part		-	-
Total Cost of Distribution Part		<u>\$103,147</u>	<u>\$205,033</u>
Plus: Interest Paid On Debt		-	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<u>\$103,147</u>	<u>\$205,033</u>
Total Capacity	A4	128,160	128,160
Distribution Tapping Fee per Gallon		\$0.80	\$1.60
Gallon per EDU for Capacity Part (1)		182.0	182.0
Distribution Tapping Fee per EDU		\$146.48	\$291.17

Exhibit A1
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
Calculation of Water Tapping Fee

		Exhibit	
C. <u>Special Purpose Part - Fire Service</u>		Original Cost	Trended Cost
Distribution	A2	\$42,108	\$83,946
PS Structure	A2	38,411	76,576
Electric & Pumping	A2	85,128	169,708
Reservoir	A2	249,136	496,671
Fire Hydrant	A2	7,642	15,235
		<u>\$422,425</u>	<u>\$842,136</u>
Less: Contributions		-	-
Net Capital		<u>\$422,425</u>	<u>\$842,136</u>
Financing Costs for Distribution Part		-	-
Total Cost of Distribution Part		<u>\$422,425</u>	<u>\$842,136</u>
Plus: Interest Paid On Debt		-	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<u>\$422,425</u>	<u>\$842,136</u>
Square footage of Buildings	A4	4,942,330	4,942,330
Special Purpose Fee per Square Foot		\$0.09	\$0.17

(1) Average Household Size Per 2021 American Community Survey 5-Year

Estimate for Weisenberg Township	2.8
Gallons Per Capita Per Day Allowed Per Act 57 of 2003	65
Total Gallons Per Day Per EDU	<u>182</u>

Exhibit A2
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
Assets

		Capacity						
			PS	Electric				
	Total Costs	Distribution	Structure	& Pumping	Purification	Reservoir	Wells	
Acquisition	\$720,932	17.5%	8.9%	19.7%	0.8%	40.4%	9.2%	
		\$126,451	\$64,019	\$141,879	\$5,695	\$290,968	\$66,542	
						Fire		
						Hydrant	Services	Metering
						1.1%	2.0%	0.4%
						\$7,642	\$14,563	\$3,172

Determination of Fire Svc Portion of Costs

	Total Costs	Distribution	PS Structure	Electric & Pumping	Purification	Reservoir	Wells	Fire Hydrant
Capacity Portion	\$703,197	\$126,451	\$64,019	\$141,879	\$5,695	\$290,968	\$66,542	\$7,642
			40.0%	40.0%	100.0%	14.4%	100.0%	
Distribution	\$196,429		\$25,608	\$56,752	\$5,695	\$41,832	\$66,542	
	\$84,343	66.7%	\$84,343.13					
Fire Svc Portion								100%
	\$422,425	\$42,108	\$38,411	\$85,128	\$0	\$249,136	\$0	\$7,642

Exhibit A3
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
Additional Assets since 2011

	Year	Original Cost		Cost Index		Trended Cost	
		Distribution	Capacity	Original	Current	Distribution	Capacity
Assets							
Meter Installation for New Customers	2012	\$109				Excluded Contribution	
Meter Installation for New Customers	2013	294				Excluded Contribution	
Meter Installation for New Customers	2014	1,634				Excluded Contribution	
Meter Installation for Existing Customers	2012	1,069		9308	13345	\$1,533	
System Improvements	P 2012		\$19,183	9308	13345		\$27,502
System Improvements	2012		106,193	9308	13345		152,249
System Improvements	2013		80,623	9547	13345		112,700
System Improvements	2014		825,689	9806	13345		1,123,701
System Improvements	2015		70,715	10039	13345		94,001
System Improvements	2016		8,987	10339	13345		11,600
System Improvements	2017		96	10738	13345		119
System Improvements	2019		500	11281	13345		592
System Improvements	2021		514	12149	13345		564
System Improvements	2022		3,343	13007	13345		3,429
Water Tank Replacement	2020		70,550			Excluded Replacement	
Water Tank Replacement	2021		932,765			Excluded Replacement	
Water Tank Replacement	2022		232,628			Excluded Replacement	
		\$1,069	\$1,112,500			\$1,533	\$1,526,457

Exhibit A4
Lehigh County Authority
Suburban Water - Arcadia West
Lehigh County, Pennsylvania
System Capacity Calculation

Source	Type	Entry Point	4-log (Entry Point) (GPM)	Well Pumping Rate (GPM)	Current Pumping Rate (GPM)	Limiting Factor	Capacity (GPD)
Well No. NL 15				95			136,800
Well No. NL 16				89			128,160
Combined Capacity							128,160

(1) Well No. NL 15 has been excluded as the largest local source.

Building Square Footage

	Address	Sq Footage
Arcadia West		
12684 Jetson Marketing	9775 Commerce Cir	225,000
12685 Batesville Casket Company	9770 Commerce Cir	83,000
12686 Kenco Logistics	9784 Commerce Cir	95,400
12687 P R E USA Inc	9735 Commerce Cir	67,000
12688 Advance Stores Inc Site 213020	9755 Commerce Cir	663,720
14962 DCT Commerce Circle LLC	9750 Commerce Cir	503,420
15752 Prologis Targeted Us Logistics Fund LP	9747 Commerce Cir A	211,130
16074 Pre USA Inc	9741 Commerce Cir	92,680
31195 Hearth And Home Technologies Inc	9747 Commerce Cir B	173,560
70614 Pre USA Inc	9729 Commerce Cir	80,000
		<u>2,194,910</u>
West Hills Business Center		
70255 National Distribution Center Lp	9645 West Hills Ct	980,000
70577 National Distribution Center Lp	9658 West Hills Ct- Bldg D	435,500
70578 National Distribution Center Lp	9677 West Hills Ct -Bldg B	231,670
70725 Behr Process Corp	9670 West Hills Ct - Bldg C	241,850
71175 National Distribution Center Lp	9606 West Hills Ct-Bldg E	415,170
71390 National Distribution Center Lp	9611 West Hills Ct	336,960
		<u>2,641,150</u>
Other		
71939 Sheetz, Inc.	2298 Golden Key Rd	6,800
17124 Northwestern Lehigh School Dis	2665 Golden Key Rd-Elem School	99,470
		<u>106,270</u>

Allocation of Bldg Square Footage

Arcadia West	2,194,910	For connections as of 12/1/21
West Hills Business Center	2,641,150	as of 12/1/21
Other	106,270	as of 12/1/21
Total	<u>4,942,330</u>	

Note: Equals square footage for those with private sprinklers.

ATTACHMENT B



LEHIGH COUNTY AUTHORITY SEWER SYSTEM TAPPING FEE CALCULATIONS FOR SUBURBAN WASTEWATER DIVISION

June 2023

Keystone Alliance Consulting, Inc.



**LEHIGH COUNTY AUTHORITY – SUBURBAN WASTEWATER DIVISION
SEWER SYSTEM TAPPING FEE CALCULATIONS**

TABLE OF CONTENTS

	<u>PAGE</u>
Sewer System Capital Charge Summary	1
Schedule A – Connection Fee	2
Schedule B – Customer Facilities Fee	3
Schedule C – Calculation of Sewer Tapping Fee	4

EXHIBITS

Table 1 – Fee Schedule / Summary

Exhibit A – Interceptor System (Western Lehigh Interceptor Capacity) - Calculation of Sewer Tapping Fee

Exhibit B – Interceptor System (Western Lehigh Interceptor) - Calculation of Sewer Tapping Fee

Exhibit B-1 – Interceptor System (Western Lehigh Interceptor) – Capacity Assets

Exhibit C – Little Lehigh Relief Interceptor - Calculation of Sewer Tapping Fee

Exhibit D1 – Upper Milford Township - Calculation of Sewer Tapping Fee

Exhibit D1-1 – Upper Milford Township – Assets

Exhibit D1-2 – Upper Milford Township – Contributions

Exhibit D2 – Lower Macungie Connection to UMiT Interceptor - Calculation of Sewer Tapping Fee

Exhibit E – Heidelberg Heights System - Calculation of Sewer Tapping Fee

Exhibit F – Wynnewood System - Calculation of Sewer Tapping Fee

Exhibit G – Sand Springs Wastewater System - Calculation of Sewer Tapping Fee

Exhibit H – Western Weisenberg Wastewater System - Calculation of Sewer Tapping Fee

Exhibit I – Western Weisenberg Treatment Plant - Calculation of Sewer Tapping Fee

**LEHIGH COUNTY AUTHORITY – SUBURBAN WASTEWATER DIVISION
SEWER SYSTEM TAPPING FEE CALCULATIONS**

**SUMMARY OF FEES CALCULATED FOR
ACT 57 TAPPING FEE STUDY**

On December 19, 1990, the Pennsylvania State Legislature enacted Act 209 of 1990, which amends the Act of July 31, 1968 (P.L. 805, No. 247). One of the provisions of that law requires municipalities that assess tapping or similar water and sewer fees to comply with the requirements of Act 203 of 1990, which amended Section 4 of the Municipalities Authorities Act. Subsequently, on December 30, 2003, the aforesaid Act 203 was amended by Act 57 of 2003 (hereinafter referred to as the “Act”). The intent of the Act was to clarify certain sections of the aforesaid Act 203. As a result, no municipality is permitted to impose any connection fee, customer facilities fee, tapping fee, or any similar fee, except as provided specifically under the Act. The various provisions of the Act are effective on or about June 30, 2005, or immediately upon any revision of a municipality’s tapping fee.

Similar to the aforesaid Act 203, the Act provides for the imposition of a tapping fee with three separate components that are designed to allow the Lehigh County Authority (the “Authority”) to recover specific capital costs. With the exception of assessments and to some extent reserve capacity fees, these are the only capital charges that an Authority may impose. Water rents and other charges that are intended to recover operation, maintenance, and debt service costs are unaffected by the Act.

The three components of the Authority’s tapping fee are (1) connection fee; (2) customer facilities fee; and (3) tapping fee. Parenthetically, it should be noted that the term “tapping fee” refers to one of the three components of the overall fee as well as the overall fee itself. Generally, the connection fee focuses on the cost of the facilities between the sewer and the property line while the customer facilities fee deals with the cost from the property line to the building. The tapping fee component covers the costs associated with the sewer collection lines and capacity-related facilities and may, under certain circumstances, include any projected capital improvement costs approved by the Authority. The tapping fee calculation is comprised of four parts – capacity, collection, special purpose, and reimbursement. Each part of the tapping fee may not be applicable to every municipality. In the case of the Lehigh County Authority’s tapping fees for the Suburban Wastewater Division, the calculations are broken down by service area and the only pertinent parts are capacity and/or collection. The situations surrounding the imposition of the special purpose and/or reimbursement portions of the tapping fee are not applicable to the Authority at this point in time but may be imposed at a later date if warranted.

The amounts shown in Table 1 reflect the tapping fees calculated for the Authority in accordance with Act 57 of 2003 and Act 209 of 1990. The Authority is justified in charging these figures or any lesser amount.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WASTEWATER DIVISION
SEWER SYSTEM TAPPING FEE CALCULATIONS****SCHEDULE A****CONNECTION FEE COMPONENT**

The connection fee recovers the cost of the installation of the service line from the Authority's sewer to the property line or curb stop of the dwelling or building being connected. When the Authority does incur costs associated with the installation of these facilities, the fee may be calculated using either: (1) the actual costs of the particular installation, (2) the average cost of similar installations, or (3) the current/trended value of the average cost. The Authority may require this cost to be borne by the property owner. Costs associated with the connection fee may include materials, rental equipment, labor, inspection, engineering, legal, and administration.

The Authority may also require, at its discretion, that an Escrow Account be established to cover any expenditure that the Authority may incur associated with making the connection. The amount of any Escrow can be based upon an estimate of actual costs or based upon a flat fee. In lieu of payment of a connection fee, the Authority may require the construction and dedication of these facilities by the property owner.

The Authority has selected to charge the average cost of similar installation to all customers. The costs of these connections have been calculated by the Authority staff and are shown in the fee schedule.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WASTEWATER DIVISION
SEWER SYSTEM TAPPING FEE CALCULATIONS**

SCHEDULE B

CUSTOMER FACILITY FEE COMPONENT

This fee covers the cost of the facilities from the property line or curb stop to the proposed dwelling or building being connected to the Authority's sewer system.

The developer is responsible for the installation and cost of the service line beyond the curb stop. In the event that the service involves a single property, the installation, and cost will be the responsibility of the property owner. However, whether the developer or the property owner installs the service line, the installation of the water meter is the responsibility of the Authority. The cost of the water meter and its installation is borne by the developer or the property owner and is paid to the Authority.

The Authority may be required to provide an inspection to ensure that the facilities have been installed properly and in conformance with its regulations. Any costs attendant to inspection will be passed onto the property owner.

The Authority has selected to charge the average cost of similar installation to all customers. The costs of these connections have been calculated by the Authority staff and are shown in the fee schedule.

**LEHIGH COUNTY AUTHORITY – SUBURBAN WASTEWATER DIVISION
SEWER SYSTEM TAPPING FEE CALCULATIONS****SCHEDULE C****TAPPING FEE COMPONENT**

The tapping fee is charged to allow the Authority to recover capital costs associated with the original construction and any additions or improvements to the Authority's sewer system as long as these facilities are still used on a regular basis. Facilities funded by others, such as a developer, and dedicated to the Authority are considered contributed capital and therefore not included in the computation of this fee.

All property owners or developers connecting to the Authority's sewer system are subject to a tapping fee, which may consist of up to four parts, which are calculated separately. The capacity part includes costs for the construction of those facilities that are related to the system's capacity, such as interceptors, pumping stations, and the treatment plant. The collection part covers costs for the installation of collection mains. The remainder of the tapping fee includes the special purpose and the reimbursement parts. These are not applicable to the Lehigh County systems. Accordingly, the tapping fee will focus on the capacity and collection parts only.

The Act provides for the determination of the capital costs of the system based on either:

- Original or historical costs of the system plus any capital improvement projects as well as the interest paid to date on any indebtedness associated with the system or
- Original costs trended to current dollars plus any capital improvement projects less any remaining indebtedness (principal only) associated with the system

The net capital costs (either original or trended) are divided by the capacity amount, resulting in the tapping fee per gallon. For Lehigh County sewer systems, the capacity is generally determined by the permitted capacity of the system or component in question.

The tapping fee calculation under the original cost and the trended original cost methodologies are presented for each component or system. The tapping fee per is disaggregated between the capacity and collection part of the sewer system where applicable. However, in some cases, such as interceptors there is no collection part. In some cases, the asset details are shown on a separate exhibit if necessary.

Some of the capital costs incurred by the Authority have been funded by state and federal grants. These costs are, for the purposes of this calculation, considered to be contributed and therefore subtracted from the total capital costs incurred by the Authority. If necessary, the contribution details are shown on a separate exhibit in some

cases.

Debt is either added or subtracted in some aspect from the calculation depending on the methodology. The interest paid on the loans is added to the original cost base while the outstanding principal on the loans is subtracted from the trended original cost base.

The Authority is permitted under the Act to choose the methodology that produces the highest tapping fee, which in the case of all the calculations contained in this report is the trended original cost approach.

The Act references two other aspects to the tapping fee component, specifically the special purpose part and the reimbursement part. These are not currently applicable to the Authority's tapping fees. However, if the situation arises, then either or both could be addressed and incorporated into the calculations.

The special purpose part is only applicable to a particular group of customers. The special purpose part is designed to recover the Authority's cost for facilities that serve a special purpose or specific area, such as a pump station and transmission main. Fees would be separately calculated for each applicable group and applied to new users as appropriate. The same calculation methodology used for the capacity part and the collection part would apply. At this time, the Authority has not designated any special purpose part.

Where appropriate, a reimbursement component may be included in the tapping fee charged for new connections to facilities constructed by others for which a reimbursement is due to the person/developer constructing the facilities. Generally, this reimbursement will be defined in a written reimbursement agreement between the Authority and the person constructing the facilities. Typically, such agreements reimburse the cost of the excess capacity available for use by future connections. At this time the Authority has no agreement(s) with any developer(s) which would require the calculation of a reimbursement part.

Table 1
LEHIGH COUNTY AUTHORITY
SUMMARY OF WASTEWATER FUND CAPITAL RECOVERY FEES
Updated June 2023

Exhibit	Charge	Per Gallon			Per EDU			(1)	(2)	Costing Method
		Existing Charge 6/6/2022	Maximum Charge 6/16/2023	New Charge	Existing Charge 6/6/2022	Maximum Charge 6/16/2023	New Charge	Gallons per EDU	Change %	
Interceptor System:										
A	Western Lehigh Interceptor Capacity	\$7.39	\$7.53	\$7.53	\$1,648.99	\$1,678.49	\$1,678.49	223.0	1.79%	Historical Trended Cost
B	Western Lehigh Interceptor	5.03	5.18	5.18	1,121.76	1,154.55	1,154.55	223.0	2.92%	Historical Trended Cost
C	Little Lehigh Relief Interceptor	1.93	1.98	1.98	429.93	442.62	442.62	223.0	2.95%	Historical Trended Cost
Total Western Lehigh Service Area		14.35	14.69	14.69	3,200.68	3,275.66	3,275.66			
Upper Milford System										
D1	Capacity	\$6.76	\$6.94	\$6.94	\$1,643.37	\$1,686.77	\$1,686.77	243.0	2.64%	Historical Trended Cost
D1	Collection	11.94	12.47	12.47	2,901.02	3,030.11	3,030.11	243.0	4.45%	Historical Trended Cost
D1	Planning Costs Capacity	0.70	0.71	0.71	169.33	172.36	172.36	243.0	1.79%	Historical Trended Cost
Lower Macungie										
D2	Capacity	\$3.10	\$3.16	\$3.16	\$725.55	\$738.52	\$738.52	234.0	1.79%	Historical Trended Cost
	MFR Charge	1.86	1.89	1.89	435.33	443.11	443.11		1.79%	
Heidelberg Heights Wastewater System										
E	Capacity	\$33.97	\$35.26	\$35.26	\$7,947.92	\$8,250.51	\$8,250.51	234.0	3.81%	Historical Trended Cost
E	Collection	4.31	4.39	4.39	1,009.48	1,027.54	1,027.54	234.0	1.79%	Historical Trended Cost
Wynnewood Terrace Wastewater System										
F	Capacity	\$86.46	\$88.52	\$88.52	\$20,232.45	\$20,712.81	\$20,712.81	234.0	2.37%	Historical Trended Cost
F	Collection	20.12	21.22	21.22	4,708.98	4,966.28	4,966.28	234.0	5.46%	Historical Trended Cost
Sand Springs Wastewater System										
G	Capacity	\$154.72	\$158.90	\$158.90	\$36,203.76	\$37,182.85	\$37,182.85	234.0	2.70%	Historical Trended Cost
	MFR Charge	100.57	103.29	103.29	23,532.45	24,168.85	24,168.85		2.70%	
G	Collection	4.26	4.34	4.34	997.01	1,014.84	1,014.84	234.0	1.79%	Historical Trended Cost
	MFR Charge	2.77	2.82	2.82	648.06	659.65	659.65		1.79%	
Western Weisenberg System										
H	LCA Land Fee	5.31	5.58	5.58	1,394.03	\$1,463.74	1,463.74	262.5	5.00%	Historical Trended Cost
H	LCA Collection Fee	3.19	3.25	3.25	837.50	\$852.48	852.48	262.5	1.79%	Historical plus Financing Costs
I	W Weisenberg Treatment Plant	\$48.84	\$49.71	49.71	12,820.18	\$13,049.49	13,049.49	262.5	1.79%	Historical Trended Cost

(1) The gallons per EDU figure to calculate the per gallon rate has changed with the 2010 census data

(2) Based on Charge Per EDU

Resulting Charges

Upper Milford System

Rt 29, Ramer Heights and Vera Cruz (Contributed Area)	\$	21.81	\$	22.34	\$22.34	\$	5,013.38	\$	5,134.79	\$5,134.79			
MFR Charge		13.09		13.40	13.40		3,008.03		3,080.88	3,080.88		2.42%	ABC + D1-Cap + D1-Plan
Rt 29, Ramer Heights and Vera Cruz (LCA - Installed Area)	\$	33.75	\$	34.81	\$34.81		7,914.40		8,164.91	\$8,164.91		3.17%	ABC + D1-Cap + D1-Coll + D1-Plan
MFR Charge		20.25		20.89	20.89		4,748.64		4,898.94	4,898.94		3.17%	
Other UMiT Areas (Contributed Area)		15.05		15.40	15.40		3,370.01		3,448.02	3,448.02		2.31%	ABC + D1-Plan
MFR Charge		9.03		9.24	9.24		2,022.00		2,068.81	2,068.81		2.31%	
Other UMiT Areas (Non-Contributed Area)		26.98		27.87	27.87		6,271.03		6,478.13	6,478.13		3.30%	ABC + D1-Coll + D1-Plan
MFR Charge		16.19		16.72	16.72		3,762.62		3,886.88	3,886.88		3.30%	

Exhibit A
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Interceptor System: Western Lehigh Interceptor Capacity

A. <u>Capacity Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
General Pool	\$1,152,500	\$1,792,972
Salisbury Portion	600,000	841,425
	<hr/>	<hr/>
	\$1,752,500	\$2,634,397
Less: Contributions	-	-
Net Capital	<hr/>	<hr/>
	\$1,752,500	\$2,634,397
Financing Costs for Capacity Part	-	-
Total Cost of Capacity Part	<hr/>	<hr/>
	\$1,752,500	\$2,634,397
Plus: Interest Paid On Debt	-	n/a
Less: Outstanding Debt	n/a	-
Eligible Cost for Capacity Part	<hr/>	<hr/>
	\$1,752,500	\$2,634,397
Total Capacity	350,000	350,000
Capacity Tapping Fee per Gallon	\$5.01	\$7.53
Gallon per EDU for Capacity Part (1)	223.0	223.0
Capacity Tapping Fee per EDU	\$1,116.59	\$1,678.49
(1) Total Gallons Per Day Per EDU Per Agreements	223	

Exhibit B
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Interceptor System: Western Lehigh Interceptor

A. <u>Capacity Part</u>	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Original Interceptor	B - 1	\$5,215,326	\$39,702,525
Phase II, Stage 1	B - 1	884,097	2,457,462
Phase II, Stage 2	B - 1	6,069,549	13,783,593
Phase II, Stage 4	B - 1	3,315,228	5,815,634
Flow Equaliz. Basin	B - 1	5,495,586	8,191,805
Iron Run PS & Force Main	B - 1	30,139	37,551
Wastewater Treatment Capacity	B - 1	601,763	850,886
WLI - WW Capacity Prg Dev	B - 1	1,262,298	1,599,055
Interceptor Conn	B - 1	1,984	2,703
Flow Monitoring Network	B - 1	419	579
Spring Creek PS Improvements	B - 1	578,883	713,228
Meter Stat. No. 5 Improvements	B - 1	172,176	230,192
Trexlerstown Wastewater Storage Facility	B - 1	290,728	334,237
		<hr/>	<hr/>
		\$23,918,176	\$73,719,448
Less: Contributions		2,536,420	19,308,913
Net Capital		<hr/>	<hr/>
		\$21,381,756	\$54,410,535
 Financing Costs for Capacity Part		 -	 -
Total Cost of Capacity Part		<hr/>	<hr/>
		\$21,381,756	\$54,410,535
 Plus: Interest Paid On Debt		 5,629,647	 n/a
 Less: Outstanding Debt		 n/a	 2,310,884
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$27,011,403	\$52,099,651
 Total Capacity		 10,063,000	 10,063,000
 Capacity Tapping Fee per Gallon		 \$2.68	 \$5.18
 Gallon per EDU for Capacity Part (1)		 223.0	 223.0
 Capacity Tapping Fee per EDU		 \$598.58	 \$1,154.55
 (1) Total Gallons Per Day Per EDU		 223	
Per Agreements			

Exhibit B - 1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Interceptor System: Western Lehigh Interceptor
Capacity Assets

Expenditure	Placed in Service			Original Cost	Cost Index		Trended Current Replacement Cost
			Original		Current		
Original Interceptor							
Interceptor	Jan	1972	\$5,215,326	1753	13345	\$39,702,525	
Phase II, Stage 1							
Interceptor	May	1991	\$884,097	4801	13345	\$2,457,462	
Phase II, Stage 2							
Interceptor	Jan	1998	\$2,449,063	5852	13345	\$5,584,885	
PS Structure	Jan	1998	2,044,224	5852	13345	4,661,683	
Pump & Elect	Jan	1998	1,506,462	5852	13345	3,435,362	
Land	Jan	1998	44,915			44,915	
Metering	Jan	1998	24,885	5852	13345	56,749	
Phase II, Stage 4							
Interceptor	Sep	2005	\$3,247,728	7540	13345	\$5,748,134	
Land	Sep	2005	67,500			67,500	
Flow Equaliz. Basin							
	Dec	2010	\$5,488,588	8952	13345	\$8,181,628	
	Jan	2012	6,998	9176	13345	10,177	
Iron Run PS & Force Main							
	Prior to	Jan	2012	\$1,086,546	Excluded - Previously counted		
		Jan	2012	1,782	9176	13345	\$2,592
		Jan	2013	200	9437	13345	283
		Jan	2014	106	9664	13345	146
		Jan	2015	209	9972	13345	280
		Jan	2017	3,172	10542	13345	4,016
		Jan	2018	23,986	10878	13345	29,426
		Jan	2019	566	11206	13345	674
		Jan	2021	117	11628	13345	134
Wastewater Treatment Capacity							
		Jan	2012	\$350	9176	13345	\$509
		Jan	2013	600,369	9437	13345	848,966
		Jan	2014	298	9664	13345	411
		Jan	2015	747	9972	13345	1,000
WLI - WW Capacity Prg Dev							
	Prior to	Jan	2012	\$546,637	Excluded - Previously counted		
		Jan	2012	66,774	9176	13345	\$97,112
		Jan	2013	246,735	9437	13345	348,901
		Jan	2014	213,732	9664	13345	295,142
		Jan	2015	91,472	9972	13345	122,412
		Jan	2016	41,663	10133	13345	54,872
		Jan	2017	216	10542	13345	273
		Jan	2019	49,312	11206	13345	58,726
		Jan	2020	188,927	11392	13345	221,307
		Jan	2021	164,961	11628	13345	189,320
		Jan	2022	198,507	12556	13345	210,989

Exhibit B - 1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Interceptor System: Western Lehigh Interceptor
Capacity Assets

Expenditure	Placed in Service		Original Cost	Cost Index Original Current		Trended Current Replacement Cost
Signatory I&I Program	Prior to	Jan 2012	\$2,291,652	Excluded - Repairs		
		Jan 2012	438,574	Excluded - Repairs		
		Jan 2013	400,188	Excluded - Repairs		
		Jan 2014	467,300	Excluded - Repairs		
		Jan 2015	324,637	Excluded - Repairs		
		Jan 2016	296,267	Excluded - Repairs		
		Jan 2017	491,531	Excluded - Repairs		
		Jan 2018	438,574	Excluded - Repairs		
		Jan 2019	630,016	Excluded - Repairs		
		Jan 2020	601,479	Excluded - Repairs		
		Jan 2021	64,092	Excluded - Repairs		
		Jan 2022	41,163	Excluded - Repairs		
Interceptor Conn		Jan 2014	\$1,823	9664	13345	\$2,517
		Jan 2021	161	11628	13345	185
Flow Monitoring Network						
		Jan 2014	\$419	9664	13345	\$579
Spring Creek PS Improvements						
		Jan 2014	\$528	9664	13345	\$728
		Jan 2015	413	9972	13345	553
		Jan 2016	49,537	10133	13345	65,243
		Jan 2017	75,841	10542	13345	96,006
		Jan 2018	343,731	10878	13345	421,684
		Jan 2019	102,233	11206	13345	121,750
		Jan 2020	2,283	11392	13345	2,675
		Jan 2022	4,317	12556	13345	4,588
Meter Stat. No. 5 Improvements						
		Jan 2015	\$161,709	9972	13345	\$216,408
		Jan 2016	10,466	10133	13345	13,785
Test & Seal - Cycle 1						
		Jan 2016	\$534,283	Excluded - Repairs		
		Jan 2017	498,251	Excluded - Repairs		
		Jan 2018	45,209	Excluded - Repairs		
		Jan 2019	64,871	Excluded - Repairs		
		Jan 2020	27,065	Excluded - Repairs		
		Jan 2021	2,261	Excluded - Repairs		
Spring Creek Force Main AARV Rep						
		Jan 2017	\$12,751	Excluded - Repairs		
		Jan 2018	15,665	Excluded - Repairs		
		Jan 2019	22,929	Excluded - Repairs		
		Jan 2020	12,014	Excluded - Repairs		
High Flow Emergency Response						
		Jan 2018	\$96,725	Excluded - Maintenance		
		Jan 2019	1,929,162	Excluded - Maintenance		
		Jan 2020	8,455	Excluded - Maintenance		

Exhibit B - 1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Interceptor System: Western Lehigh Interceptor
Capacity Assets

Expenditure	Placed in Service		Original Cost	Cost Index Original Current		Trended Current Replacement Cost
Trexlerstown Wastewater Storage Facility	Jan	2018	\$34,858	10878	13345	\$42,763
	Jan	2019	54,778	11206	13345	65,235
	Jan	2020	35,427	11392	13345	41,499
	Jan	2021	102,104	11628	13345	117,182
	Jan	2022	63,562	12556	13345	67,558
Rehab - Cycle 1	Jan	2019	\$2,147	Excluded - Maintenance		
	Jan	2020	279,080	Excluded - Maintenance		
	Jan	2021	187,016	Excluded - Maintenance		
	Jan	2022	43,873	Excluded - Maintenance		
Act 537 - CRB Tool	Jan	2020	\$60,260	11392	13345	\$70,588
	Jan	2021	133,347	11628	13345	153,038
	Jan	2022	25,172	12556	13345	26,754
Act 537 - Jacobs PTP	Jan	2020	\$99,070	11392	13345	\$116,050
	Jan	2021	245,215	11628	13345	281,425
	Jan	2022	1,352	12556	13345	1,437
Act 537 - AECOM PTP Phase 2	Jan	2020	\$108,613	11392	13345	\$127,228
	Jan	2021	283,012	11628	13345	324,803
	Jan	2022	216,811	12556	13345	230,443
Spring Creek Force Main AARV Rep	Jan	2021	\$933	Excluded - Repairs		
	Jan	2022	933	Excluded - Repairs		
Upper WL Pump Station and Force Main	Jan	2022	\$226,487	12556	13345	\$240,728
Night Weiring	Jan	2022	\$272,569	Excluded - I&I Abatement		
Spring Creek Pump Station Upgrade	Jan	2022	\$1,717	12556	13345	\$1,825
Lateral Tap Connections	Jan	2022	\$45,353	Excluded - I&I Abatement		
			\$25,319,231			\$75,293,768

Exhibit C
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Little Lehigh Relief Interceptor

A. Capacity Part

	<u>Original Cost</u>	<u>Trended Cost</u>
Project Costs - Dec. 1986	\$4,750,332	\$14,569,796
Park PS Improvements Ph1 - Prior to 2012	34,670	50,422
Park PS Improvements Ph1 - 2012	102,160	148,575
Park PS SCADA Gen - Prior to 2012	34,421	50,060
Park PS SCADA Gen - 2012	11,326	16,472
Park PS Improvements Ph1 - 2013	21,619	30,571
Park PS SCADA Gen - 2013	6,189	8,752
Park PS Improvements Ph1 - 2014	74	103
Park PS SCADA Gen - 2014	140,634	194,202
Park PS Improvements Ph1 - 2015	973	1,303
Park PS SCADA Gen - 2015	72,378	96,860
Park PS Improvements Ph1 - 2016	98,867	130,212
Park PS Force Main Upgrade - 2016	101	133
Park PS Improvements Ph1 - 2017	283,576	358,975
Park PS Force Main Upgrade - 2017	2,402	3,041
Park PS Force Main Extension - 2017	7,087	8,971
Park PS Improvements Ph1 - 2018	380,094	466,294
Park PS Force Main Upgrade - 2018	19,225	23,585
Park PS Force Main Extension - 2018	710	871
Park PS Improvements Ph1 - 2019	3,590,626	4,276,104
Park PS Force Main Upgrade - 2019	12,092	14,400
Park PS SCADA Gen - 2020	2,079	2,435
Park PS Improvements Ph1 - 2020	478,040	559,974
Park PS Force Main Upgrade - 2020	64,833	75,945
Park PS Force Main Extension - 2020	886	1,038
Park PS SCADA Gen - 2021	9,445	10,840
Park PS Improvements Ph1 - 2021	75,794	86,986
Park PS Force Main Upgrade - 2021	196,843	225,910
Park PS SCADA Gen - 2022	1,828	1,943
Park PS Improvements - 2022	207,576	220,627
Park PS Force Main Upgrade - 2022	293	312
Park PS Force Main Extension - 2022	1,561	1,659
	<u>\$10,608,736</u>	<u>\$21,637,370</u>

Exhibit C
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Little Lehigh Relief Interceptor

A. <u>Capacity Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Total Costs	\$10,608,736	\$21,637,370
Less: Contributions	583,221	1,788,804
Net Capital	\$10,025,515	\$19,848,567
Financing Costs for Capacity Part	-	-
Total Cost of Capacity Part	\$10,025,515	\$19,848,567
Plus: Interest Paid On Debt	4,890,657	n/a
Less: Outstanding Debt	n/a	-
Eligible Cost for Capacity Part	\$14,916,172	\$19,848,567
Total Capacity	10,000,000	10,000,000
Capacity Tapping Fee per Gallon	\$1.49	\$1.98
Gallon per EDU for Capacity Part (1)	223.0	223.0
Capacity Tapping Fee per EDU	\$332.63	\$442.62
(1) Total Gallons Per Day Per EDU Per Agreements	223	

Exhibit D1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Upper Milford Township

A. <u>Capacity Part</u>	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Rt. 29 Project Cost & Capitalized Interest	D1 - 1	\$987,650	\$2,854,090
		<hr/>	<hr/>
		\$987,650	\$2,854,090
Less: Contributions		-	-
Net Capital		<hr/>	<hr/>
		\$987,650	\$2,854,090
Financing Costs for Capacity Part		-	-
Total Cost of Capacity Part		<hr/>	<hr/>
		\$987,650	\$2,854,090
Plus: Interest Paid On Debt		54,078	n/a
Less: Outstanding Debt		n/a	170,044
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$1,041,728	\$2,684,047
Total Capacity		386,669	386,669
Capacity Tapping Fee per Gallon		\$2.69	\$6.94
Gallon per EDU for Capacity Part (1)		243.0	243.0
Capacity Tapping Fee per EDU		\$654.67	\$1,686.77

Exhibit D1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Upper Milford Township

B. <u>Collection Part</u>	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Rt. 29 Project Cost & Capitalized Interest	D1 - 1	\$658,434	\$1,902,729
South 7th Street - Ph - 1	D1 - 1	204,222	318,791
South 7th Street - Ph - 2	D1 - 1	233,261	348,955
Ramer Heights Project & Capitalized Interest	D1 - 1	148,811	392,545
Vera Cruz Project	D1 - 1	4,284,326	6,229,586
Additional Project Costs	D1 - 1	330,103	394,408
		<hr/>	<hr/>
		\$5,859,157	\$9,587,013
Less: Contributions	D1 - 2	<hr/>	<hr/>
Net Capital		2,688,249	3,852,365
		<hr/>	<hr/>
		\$3,170,908	\$5,734,649
Financing Costs for Collection Part		-	-
Total Cost of Collection Part		<hr/>	<hr/>
		\$3,170,908	\$5,734,649
Plus: Interest Paid On Debt		290,369	n/a
Less: Outstanding Debt		n/a	913,037
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$3,461,278	\$4,821,611
Total Capacity		386,669	386,669
Collection Tapping Fee per Gallon		\$8.95	\$12.47
Gallon per EDU for Capacity Part (1)		243.0	243.0
Collection Tapping Fee per EDU		\$2,175.22	\$3,030.11

Exhibit D1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Upper Milford Township

C. <u>Capacity Part - Planning Costs</u>	<u>Exhibit Reference</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Planning Costs		\$186,279	\$271,031
		<hr/>	<hr/>
		\$186,279	\$271,031
Less: Contributions		-	-
Net Capital		<hr/>	<hr/>
		\$186,279	\$271,031
Financing Costs for Capacity Part		1,184	3,232
Total Cost of Capacity Part		<hr/>	<hr/>
		\$187,463	\$274,263
Plus: Interest Paid On Debt		29,122	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$216,585	\$274,263
Total Capacity		386,669	386,669
Capacity Tapping Fee per Gallon		\$0.56	\$0.71
Gallon per EDU for Capacity Part (1)		243.0	243.0
Capacity Tapping Fee per EDU		\$136.11	\$172.36
 (1) Average Household Size Per 2021 American Community Survey 5-Year Estimate for Upper Milford Township			
		2.70	
Gallons Per Capita Per Day Allowed Per Act 57 of 2003		90	
Total Gallons Per Day Per EDU		<hr/>	<hr/>
		243	

Exhibit D1 - 1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Upper Milford Township

Capacity Assets

<u>Expenditure</u>	<u>Placed in Service</u>		<u>Original Cost</u>	<u>Cost Index</u> <u>Original Current</u>		<u>Trended Current Replacement Cost</u>
Rt. 29 Project Cost & Capitalized Interest Interceptor	Aug	1989	\$987,650	4618	13345.00	\$2,854,090
			\$987,650			\$2,854,090

Collection Assets

Expenditure	Placed in Service			Cost Index		Trended Current Replacement Cost	
			Original Cost	Original	Current		
Rt. 29 Project Cost & Capitalized Interest							
Collector	Aug	1989	\$658,434	4618	13345.00	\$1,902,729	
Ramer Heights Project & Capitalized Interest							
Collector	Dec	1992	\$148,811	5059	13345.00	\$392,545	
South 7th Street - Ph - 1							
Collector	Jan	2009	\$204,222	8549	13345.00	\$318,791	
South 7th Street - Ph - 2							
Collector	Oct	2010	\$233,261	8921	13345.00	\$348,955	
Vera Cruz Project							
	Prior to	Jan	2012	\$2,495,282	9176	13345.00	\$3,628,982
		Jan	2012	1,765,192	9176	13345.00	2,567,185
		Jan	2013	18,891	9437	13345.00	26,713
		Jan	2014	1,572	9664	13345.00	2,170
		Jan	2015	3,390	9972	13345.00	4,537

Exhibit D1 - 1
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Upper Milford Township

Capacity Assets

Expenditure	Placed in Service		Original Cost	Cost Index		Trended Current Replacement Cost
				Original	Current	
Additional Project Costs						
South 7th Street Extension	Jan	2012	\$458	9176	13345.00	\$666
South 7th Street Extension - Ph - 2	Jan	2012	2,701	9176	13345.00	3,928
Weaver - 4751 Mill Road	Jan	2012	1,650	9176	13345.00	2,400
Weaver - 4751 Mill Road	Jan	2013	8,555	9437	13345.00	12,097
Fields at Indian Creek	Jan	2014	2,048	9664	13345.00	2,828
Weaver - 4751 Mill Road	Jan	2015	150	9972	13345.00	201
Fields at Indian Creek	Jan	2015	4,433	9972	13345.00	5,932
Fields at Indian Creek	Jan	2016	25,037	10133	13345.00	32,974
Fields at Indian Creek	Jan	2017	12,829	10542	13345.00	16,240
Kohler Tract - Sewer	Jan	2017	442	10542	13345.00	559
New Tripoli Bank - Buckeye	Jan	2017	809	10542	13345.00	1,024
Fields at Indian Creek	Jan	2018	266	10878	13345.00	326
Kohler Tract - Sewer	Jan	2018	39,264	10878	13345.00	48,169
New Tripoli Bank - Buckeye	Jan	2018	226	10878	13345.00	278
Fields at Indian Creek - Ph 3	Jan	2018	6,536	10878	13345.00	8,019
Weaver - 4251 Chestnut Street	Jan	2018	874	10878	13345.00	1,072
Fields at Indian Creek	Jan	2019	48	11206	13345.00	57
Kohler Tract - Sewer	Jan	2019	13,193	11206	13345.00	15,711
Fields at Indian Creek - Ph 3	Jan	2019	1,233	11206	13345.00	1,468
Weaver - 4251 Chestnut Street	Jan	2019	349	11206	13345.00	416
Fields at Indian Creek - Ph 4	Jan	2019	6,401	11206	13345.00	7,623
Kohler Tract - Sewer	Jan	2020	924	11392	13345.00	1,082
Fields at Indian Creek - Ph 3	Jan	2020	901	11392	13345.00	1,055
Fields at Indian Creek - Ph 4	Jan	2020	4,563	11392	13345.00	5,346
Kohler Tract - Sewer	Jan	2021	3,620	11628	13345.00	4,155
Fields at Indian Creek - Ph 3	Jan	2021	1,251	11628	13345.00	1,436
Fields at Indian Creek - Ph 4	Jan	2021	3,872	11628	13345.00	4,443
Manhole Lining	Jan	2021	184,506	11628	13345.00	211,751
Kohler Tract - Sewer	Jan	2022	1,045	12556	13345.00	1,111
Fields at Indian Creek - Ph 3	Jan	2022	55	12556	13345.00	58
Fields at Indian Creek - Annex	Jan	2022	1,866	12556	13345.00	1,983
			\$5,859,157			\$9,587,013

Exhibit D1 - 2
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Upper Milford Township

Expenditure	Contributions - Collection			Cost Index		Trended Current Replacement Cost
	Placed in Service		Original Cost	Original	Current	
South 7th Street - Ph - 1						
Federal Grant	Jan	2009	\$172,100	8549	13345.00	\$268,648
South 7th Street - Ph - 2						
Federal Grant	Oct	2010	\$206,649	8921	13345.00	\$309,144
Vera Cruz Project Costs thru 4/30/14						
Federal Grant	Dec	2012	\$1,309,500	9412	13345.00	\$1,856,702
State Grant	Dec	2012	1,000,000	9412	13345.00	1,417,871
			\$2,688,249			\$3,852,365

Exhibit D2
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Lower Macungie Connections to UMiT Interceptor

A. <u>Capacity Part</u>		<u>Original Cost</u>	<u>Trended Cost</u>
Rt. 29 Project Cost	\$1,646,084		
% of Project applicable to LMT Interceptor	24.79%	\$408,064	\$1,179,215
		<hr/>	<hr/>
		\$408,064	\$1,179,215
Less: Contributions		<hr/>	<hr/>
Net Capital		\$408,064	\$1,179,215
		<hr/>	<hr/>
Financing Costs for Capacity Part		-	-
Total Cost of Capacity Part		\$408,064	\$1,179,215
		<hr/>	<hr/>
Plus: Interest Paid On Debt		-	n/a
		<hr/>	<hr/>
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		\$408,064	\$1,179,215
		<hr/>	<hr/>
Total Capacity		373,632	373,632
		<hr/>	<hr/>
Capacity Tapping Fee per Gallon		\$1.09	\$3.16
		<hr/>	<hr/>
Gallon per EDU for Capacity Part (1)		234.0	234.0
		<hr/>	<hr/>
Capacity Tapping Fee per EDU		\$255.56	\$738.52
		<hr/>	<hr/>
(1) Average Household Size Per 2021 American Community Survey 5-Year Estimate for Lower Macungie Township		2.6	
Gallons Per Capita Per Day Allowed Per Act 57 of 2003		90	
Total Gallons Per Day Per EDU		<hr/>	<hr/>
		234	

Exhibit E
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Heidelberg Heights System

A. <u>Capacity Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Project Costs	\$785,141	\$1,679,658
WWTP Upgrades - 2017	85,762	108,565
WWTP Upgrades - 2018	17,879	21,933
WWTP Upgrades - 2019	192,887	229,711
WWTP Upgrades - 2020	12,044	14,109
WWTP Upgrades - 2021	17,777	20,402
WWTP Upgrades - 2022	38,704	41,138
	<hr/>	<hr/>
	\$1,150,194	\$2,115,516
Less: Contributions	-	-
Net Capital	<hr/>	<hr/>
	\$1,150,194	\$2,115,516
Financing Costs for Capacity Part	-	-
Total Cost of Capacity Part	<hr/>	<hr/>
	\$1,150,194	\$2,115,516
Plus: Interest Paid On Debt	-	n/a
Less: Outstanding Debt	n/a	-
Eligible Cost for Capacity Part	<hr/>	<hr/>
	\$1,150,194	\$2,115,516
Total Capacity	60,000	60,000
Capacity Tapping Fee per Gallon	\$19.17	\$35.26
Gallon per EDU for Capacity Part (1)	234.0	234.0
Capacity Tapping Fee per EDU	\$4,485.76	\$8,250.51

Exhibit E
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Heidelberg Heights System

B. <u>Collection Part</u>		<u>Original Cost</u>	<u>Trended Cost</u>
Project Costs		\$123,157	\$263,471
I&I Removal Project - 2016	Excluded - Repairs	57,099	
I&I Removal Project - 2017	Excluded - Repairs	1,729	
I&I Removal Project - 2018	Excluded - Repairs	352,619	
I&I Removal Project - 2019	Excluded - Repairs	385,652	
I&I Removal Project - 2020	Excluded - Repairs	221,028	
I&I Removal Project - 2021	Excluded - Repairs	418,477	
I&I Removal Project - 2022	Excluded - Repairs	249,630	
		<hr/>	<hr/>
		\$123,157	\$263,471
Less: Contributions		-	-
Net Capital		<hr/>	<hr/>
		\$123,157	\$263,471
Financing Costs for Collection Part		-	-
Total Cost of Collection Part		<hr/>	<hr/>
		\$123,157	\$263,471
Plus: Interest Paid On Debt		-	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$123,157	\$263,471
Total Capacity		60,000	60,000
Collection Tapping Fee per Gallon		\$2.05	\$4.39
Gallon per EDU for Capacity Part (1)		234.0	234.0
Collection Tapping Fee per EDU		\$480.31	\$1,027.54
 (1) Average Household Size Per 2021 American Community Survey 5-Year Estimate for Heidelberg Township			
		2.6	
Gallons Per Capita Per Day Allowed Per Act 57 of 2003		90	
Total Gallons Per Day Per EDU		<hr/>	<hr/>
		234	

Exhibit F
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Wynnewood System

A. <u>Capacity Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Acquisition Costs	\$247,393	\$493,123
System Improvements - Prior to 2012	3,990	5,803
System Improvements - 2012	32,645	47,477
System Improvements - 2013	55,264	78,147
System Improvements - 2014	67,642	93,407
WWTP Improvements - 2015	21,241	28,425
WWTP Improvements - 2016	5,080	6,691
WWTP Improvements - 2017	85,467	108,191
WWTP Improvements - 2018	80,619	98,903
WWTP Improvements - 2019	2,362,497	2,813,516
WWTP Improvements - 2020	1,155,877	1,353,987
WWTP Improvements - 2021	133,252	152,929
WWTP Improvements - 2022	28,579	30,376
	<hr/>	<hr/>
	\$4,279,547	\$5,310,976
Less: Contributions	-	-
Net Capital	<hr/>	<hr/>
	\$4,279,547	\$5,310,976
Financing Costs for Capacity Part	-	-
Total Cost of Capacity Part	<hr/>	<hr/>
	\$4,279,547	\$5,310,976
Plus: Interest Paid On Debt	-	n/a
Less: Outstanding Debt	n/a	-
Eligible Cost for Capacity Part	<hr/>	<hr/>
	\$4,279,547	\$5,310,976
Total Capacity	60,000	60,000
Capacity Tapping Fee per Gallon	\$71.33	\$88.52
Gallon per EDU for Capacity Part (1)	234.0	234.0
Capacity Tapping Fee per EDU	\$16,690.23	\$20,712.81

Exhibit F
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Wynnewood System

B. <u>Collection Part</u>		<u>Original Cost</u>	<u>Trended Cost</u>
Acquisition Costs		\$406,318	\$809,905
Riverside Prof Cntr Additions - 2012		132	192
Riverside Prof Cntr Additions - 2013		1,476	2,087
Wynnewood I&I Project - 2013	Excluded - Repairs	24,096	
Wynnewood I&I Project - 2014	Excluded - Repairs	17,020	
Wynnewood I&I Project - 2019	Excluded - Repairs	5,120	
Wynnewood I&I Project - 2020	Excluded - Repairs	28,413	
Main, PS & Force Main - 2015		645,390	863,695
Main, PS & Force Main - 2016		102,876	135,493
Main, PS & Force Main - 2017		691	875
Main, PS & Force Main - 2020		569	666
		<u>\$1,157,452</u>	<u>\$1,812,912</u>
Less: Contributions		-	-
Net Capital		<u>\$1,157,452</u>	<u>\$1,812,912</u>
Financing Costs for Collection Part		-	-
Total Cost of Collection Part		<u>\$1,157,452</u>	<u>\$1,812,912</u>
Plus: Interest Paid On Debt		57,094	n/a
Less: Outstanding Debt		n/a	539,508
Eligible Cost for Capacity Part		<u>\$1,214,546</u>	<u>\$1,273,404</u>
Total Capacity		60,000	60,000
Collection Tapping Fee per Gallon		\$20.24	\$21.22
Gallon per EDU for Capacity Part (1)		234.0	234.0
Collection Tapping Fee per EDU		\$4,736.73	\$4,966.28
(1) Average Household Size Per 2021 American Community Survey 5-Year			
Estimate for North Whitehall Township		2.6	
Gallons Per Capita Per Day Allowed Per Act 57 of 2003		<u>90</u>	
Total Gallons Per Day Per EDU		234	

Exhibit G
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Sand Spring Wastewater System

A. <u>Capacity Part</u>		<u>Original Cost</u>	<u>Trended Cost</u>
Acquisition Costs		\$88,048	\$161,025
System Improvements - 2005		6,358	11,536
WWTP Improvements - 2015		20,683	27,680
WWTP Improvements - 2016		14,546	19,158
WWTP Improvements - 2017		95,588	121,003
WWTP Improvements - 2018		54,764	67,184
WWTP Improvements - 2019		161,528	192,365
WWTP Improvements - 2020		3,600,767	4,217,917
WWTP Improvements - 2021		592,526	680,022
WWTP Improvements - 2022		59,882	63,647
New WWTP 2021 Costs	Excluded - Pending Completion	9,238	
New WWTP 2022 Costs	Excluded - Pending Completion	2,674	
		<hr/>	<hr/>
		\$4,694,691	\$5,561,537
Less: Contributions		-	-
Net Capital		<hr/>	<hr/>
		\$4,694,691	\$5,561,537
Financing Costs for Capacity Part		-	-
Total Cost of Capacity Part		<hr/>	<hr/>
		\$4,694,691	\$5,561,537
Plus: Interest Paid On Debt		-	n/a
Less: Outstanding Debt		n/a	-
Eligible Cost for Capacity Part		<hr/>	<hr/>
		\$4,694,691	\$5,561,537
Total Capacity		35,000	35,000
Capacity Tapping Fee per Gallon		\$134.13	\$158.90
Gallon per EDU for Capacity Part (1)		234.0	234.0
Capacity Tapping Fee per EDU		\$31,387.36	\$37,182.85

Exhibit G
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Sand Spring Wastewater System

B. <u>Collection Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
Acquisition Costs	\$58,452	\$106,899
System Improvements - 2010	5,980	9,215
System Improvements - 2012	3,256	4,735
System Improvements - 2013	21,882	30,943
	<hr/>	<hr/>
	\$89,570	\$151,793
Less: Contributions	-	-
Net Capital	<hr/>	<hr/>
	\$89,570	\$151,793
Financing Costs for Collection Part	-	-
Total Cost of Collection Part	<hr/>	<hr/>
	\$89,570	\$151,793
Plus: Interest Paid On Debt	-	n/a
Less: Outstanding Debt	n/a	-
Eligible Cost for Capacity Part	<hr/>	<hr/>
	\$89,570	\$151,793
Total Capacity	35,000	35,000
Collection Tapping Fee per Gallon	\$2.56	\$4.34
Gallon per EDU for Capacity Part (1)	234.0	234.0
Collection Tapping Fee per EDU	\$598.84	\$1,014.84
 (1) Average Household Size Per 2021 American Community Survey 5-Year		
Estimate for North Whitehall Township	2.6	
Gallons Per Capita Per Day Allowed Per Act 57 of 2003	90	
Total Gallons Per Day Per EDU	<hr/>	
	234	

Exhibit I
Lehigh County Authority - Suburban Wastewater Division
Lehigh County, Pennsylvania
Calculation of Sewer Tapping Fee
Western Weisenberg Treatment Plant

A. <u>Capacity Part</u>	<u>Original Cost</u>	<u>Trended Cost</u>
W. Weisenberg Treatment Plant Estimated Cost (1)	\$3,247,214	
Portion attributable to New Customers	43.7%	
 Total Attributable to New Customers	\$1,417,652	\$1,957,634
New Propane Tank 2020 Costs	1,071	1,255
New Propane Tank 2021 Costs	14,587	16,741
Mechanical Screen Addition to Existing Plant	18,255	19,402
 Less: Contributions		-
Net Capital		<u>\$1,995,032</u>
 Financing Costs for Capacity Part		-
Total Cost of Capacity Part		<u>\$1,995,032</u>
 Plus: Interest Paid On Debt		n/a
 Less: Outstanding Debt		735,997
Eligible Cost for Capacity Part		<u>\$1,259,035</u>
 Prorated Share of Design Capacity		17,463
Capacity Tapping Fee per Gallon		\$72.10
 2014 Original Fee		\$36.00
2020 Existing Fee		\$42.44
2021 Recommended fee per gallon (1)		\$49.71

(1) The unrecovered capital costs will be captured through ongoing user fees.

The Plant fee per gallon is increased by the change in the ENR index since project completion in 2014.

Note: These fees exclude existing Western Weisenberg customers and the West Hills

Business Center, which is constructing the plant and contributing towards the plant.

Plant Allocation:	Total Allocation (gpd)	LCA Share
Western Weisenberg	10,537	-
Western Weisenberg - Remaining Commercial	1,463	1,463
West Hills Business Ctr	12,000	-
Weisenberg Elementary School	8,000	8,000
Bandit Truck Stop	3,000	3,000
Unallocated	5,000	5,000
	<u>40,000</u>	<u>17,463</u>
		<u>43.7%</u>

MEMORANDUM

Date: July 11, 2023

To: LCA Board of Directors
Liesel Gross, C.E.O.
From: Albert J. Capuzzi, Director of Engineering & Asset Management
Subject: Water Filtration Plant: PFAS Compliance Study

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Professional Services Authorization – Hazen & Sawyer	\$97,778

**Included in the Capital Project Authorization*

BACKGROUND:

Earlier this year, the U.S. Environmental Protection Agency published proposed national drinking water standards for six per- and polyfluoroalkyl substances (PFAS). This follows years of evolving regulatory guidance on how water utilities should be viewing these "forever chemicals" in their water supplies. LCA has monitored for various PFAS substances over the past few years, and some water sources show low levels of PFAS that require additional study to understand whether treatment will be needed to meet the newly proposed federal standards for drinking water. In particular, the four water sources that supply the Allentown Division water filtration plant (Schantz Spring, Crystal Spring, the Little Lehigh Creek, and the Lehigh River) must be studied carefully. A variety of treatment options or operational alternatives may exist to achieve regulatory compliance. Staff recommends a study, with consultant support, to evaluate these treatment options and operational alternatives for the Allentown Division Water Filtration Plant (WFP).

PROJECT OVERVIEW:

As noted above, there are four separate water sources that supply the Allentown Division WFP – Schantz Spring, Crystal Spring, the Little Lehigh Creek, and the Lehigh River. All four sources are treated at the WFP, but not all sources go through the same treatment processes at the plant due to the natural qualities of the different water types. After treatment, all water is transmitted to the water distribution network through a series of pumps at the WFP, and the water sources are blended as the treated water leaves the plant.

Due to the different treatment methods for the four water sources, a variety of factors and options must be considered to determine the optimal PFAS compliance approach. Treatment options may include modifying the current filters, adding new post-filtration treatment units, and adding separate treatment units for individual water source(s) as needed depending on PFAS concentrations. Current treatment technology options for PFAS include granular activated carbon (GAC), ion exchange resin, a novel media, and other treatment options that may be explored further as part of this study. In addition, LCA seeks to explore other options such as discontinuing the use of any affected water sources, optimized blending of sources to achieve compliance, or other operational approaches that may be more cost-effective than treatment.

The purpose of the study will be to evaluate at a high level which approaches to compliance will be most likely to achieve LCA's goals for water quality at a reasonable cost. The work is expected to be completed in three months.

FINANCIAL:

This work was prompted by the proposed new federal drinking water regulation. As a result, the project would fall into a "Change of Law" category as defined by the Allentown Water/Sewer Lease. Through discussion with the City of Allentown, it was agreed that the study would be an appropriate use of funds currently in a reserve fund established under the Lease terms called the "Event Driven Capex Reserve Fund." This reserve fund was established in 2021 specifically for the purposes of completing feasibility analyses, engineering evaluations, and other similar studies in advance of developing a compliance plan related to a new change of law or regulation. Use of such funds are not recoverable through the customer rates. However, future projects that may result from the work completed in the study may be recovered through a Change of Law fee applied to water users.

PROJECT STATUS:

Pending Board approval of this study.

THIS APPROVAL - STUDY PHASE:

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

Task 0 – Project Management, Kickoff Meeting

Task 1 – Summarize Regulations, Review and Summarize Water Quality Data, Source Options, Develop Target Water Quality

Task 2 – Review & Evaluate Treatment / Source Selection Options

- Develop criteria for evaluation.
- Develop a list of viable options.
- Develop capital and operating cost model for evaluation.
- Evaluate options based on criteria, costs, and other impacting issues.

Task 3 - Review & Evaluate GAC vs Resin vs Novel Adsorbent vs other treatment options as determined by the consultant

- Evaluate the effectiveness of Rapid Small Scale Column Test (RSSCT) compared to pilot or full-scale testing for recommended approach.

Task 4 – Prepare Concept Design and Cost Estimate

- Develop site plan, process schematic, and disposal/media rinse options
- Develop design criteria, capital and operating cost estimates
- Develop implementation schedule and risk mitigation plan
- Develop funding options and communications plan.

Additional Considerations:

- a. Since EPA's drinking water regulation has not been finalized, the consultant must have capacity to evaluate new approaches in the event of regulatory changes.
- b. Clarify cost and options for disposal of spent material.

CONSULTANT SELECTION:

A Request for Proposals was issued to six firms on May 17, 2023. Proposals were received, with a period for follow-up questions, ending on June 16, 2023. An internal LCA team reviewed all proposals for non-cost factors including Consultant Team, Qualifications, Scope/Approach, and Project Understanding. The following table displays the consultants who proposed on this project, their cost proposal, and the staff ranking on non-cost factors:

Consultant	Original Cost Proposal*	Staff Rank on Non-Cost Factors
Hazen & Sawyer	\$217,000	1
AECOM	\$147,500	2
Black & Veatch	\$249,563	greater than 2
CDM Smith	\$186,373	greater than 2
Arcadis	\$129,787	greater than 2
Corona	\$209,670	greater than 2

** See section below on the evaluation of RSSCT vs. AI options.*

Upon review of the proposals, it was determined that Hazen & Sawyer and AECOM provided the most responsive proposal, and their cost proposals required further review.

Rapid Small Scale Column Test (RSSCT) vs. Artificial Intelligence (AI) Options Evaluation:

RSSCT is a small-scale treatment demonstration that mirrors a water plant's treatment process. It is used most often to verify the effectiveness of potential treatment process changes or new filter media. In other words, it is a scaled-down version of a pilot test that allows engineers to test various parameters and treatment methods prior to making a recommendation for further study or piloting at a larger scale. The cost associated with RSSCT is significant because it involves construction of a live model of the water treatment process and requires repetitive test runs and laboratory analyses to determine treatment effectiveness of various approaches using the variety of source water blends that may be treated at the plant.

The proposal from Hazen & Sawyer offered a "value-added" alternative approach in Task 3 that discarded RSSCT as a testing approach, but added the use of a proprietary model using artificial intelligence (AI) to evaluate scenarios related to treatment and water blending options. Hazen & Sawyer's cost proposal for this alternative AI approach is \$97,778.

For comparison, since AECOM's base proposal was ranked highly on non-cost factors, their proposal was further reviewed to determine if an option without RSSCT would be comparable. The total cost proposal for AECOM without RSSCT is \$77,000; however, AECOM did not include an alternative for RSSCT, such as the use of AI or other modeling software.

Recommendation:

The LCA team reviewed all proposals, including the alternative, low-cost approach offered by Hazen & Sawyer. Due to the need to analyze approaches for four separate water sources, along with all the various water “blends” that are a result operational decisions made daily at the WFP, an AI model is preferred over RSSCT, which can only be used to evaluate one “blend” of water at a time.

As a result of this evaluation, LCA staff recommend authorizing Hazen & Sawyer to complete this study based on their alternative technical and cost proposal, totaling \$97,778.

Qualifications:

Hazen & Sawyer is a highly respected and experienced engineering firm. They are very familiar with the Allentown Division WFP due to their work on the water filter upgrade project design phase. Hazen & Sawyer is also engaged with LCA on the Strategic Asset Management Plan development project. Regarding PFAS treatment, Hazen & Sawyer has completed 38 similar studies for water treatment facilities across the nation.

PROJECT SCHEDULE:

Assuming Board approval at the July 24, 2023 meeting, Notice to Proceed will be issued in July with an estimated completion date of the study by November 2023.

FUTURE AUTHORIZATIONS:

Future work may include pilot testing, design, and construction of recommended treatment upgrades as determined by the study.



Lehigh County Authority

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

PROFESSIONAL SERVICES AUTHORIZATION

Professional: HAZEN AND SAWYER
One South Broad Street
Philadelphia, PA 19107

Date: July 24, 2023

Requested By: Charles Volk

Approvals

Department Head:

Chief Executive

Officer:

Allentown Division – Water Filtration Plant PFAS Compliance Study

Hazen and Sawyer (Hazen) will perform the study phase services for PFAS regulatory compliance in accordance with their proposal dated 6/7/23, including the following major items of work:

Professional Services
1. Attend kick-off meeting
2. Summarize regulations, water quality data, source options, and develop water quality targets
3. Review and evaluate treatment and source selection options
4. Review and evaluate granular activated carbon (GAC) versus other treatment options
5. Prepare concept design and cost opinion – develop process schematic, design criteria, implementation schedule, and risk analysis.

Study Phase

This Authorization: \$97,778

Total Authorization to Date (not to be exceeded without further authorization): \$97,778

Time Table and Completion Deadline: Study completion anticipated for Q4 of 2023.

(For Authority Use Only)

Authorization Completion:

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

MEMORANDUM

Date: July 17, 2023

To: LCA Board of Directors
Liesel Gross, C.E.O.
From: Albert J. Capuzzi, Director of Engineering & Asset Management
Subject: Suburban Division: Sand Spring WWTP: Treatment Process Modification

MOTIONS / APPROVALS REQUESTED:

No.	Item	Amount
1	Capital Project Authorization – Design & Construction Phase Engineering Services	\$192,981
1A*	Professional Services Authorization – Tetra Tech Inc.	\$172,981

**Included in the Capital Project Authorization*

BACKGROUND:

The existing Sand Spring Wastewater Treatment Plant (WWTP) receives flows and organic loads substantially higher than it was originally designed to treat. As a result, since the plant went into service in May 2021, it has incurred numerous permit violations. Tetra Tech Inc. completed a study in April 2023 for Lehigh County Authority (LCA) that identified the underlying causes for non-compliance and provided recommended short-term and long-term measures to help improve the performance. Some of Tetra Tech's recommendations were included in the compliance plan that LCA submitted to the Pennsylvania Department of Environmental Protection (DEP) for their review in April 2023. LCA staff also met with DEP to discuss long-term concerns regarding the high flows received at the Sand Spring WWTP, which may need to be addressed via an Act 537 Plan. LCA and North Whitehall Township have agreed to partner together to complete the Act 537 Plan, which will address the Sand Spring service area as well as all other sewer service needs in the Township. DEP has expressed support for the Act 537 planning approach, but no official response has been received to date regarding the Sand Spring WWTP compliance plan.

While the Act 537 planning process will address long-term needs of the system, LCA plans to implement the short-term treatment modifications outlined in the Tetra Tech study. These short-term measures are intended to reduce the number of permit violations. Additionally, Tetra Tech believes that the short-term measures may improve treatment performance sufficiently well to obviate the need for plant expansion, which would be a significant cost savings. The short-term measures will be implemented in phases as described below.

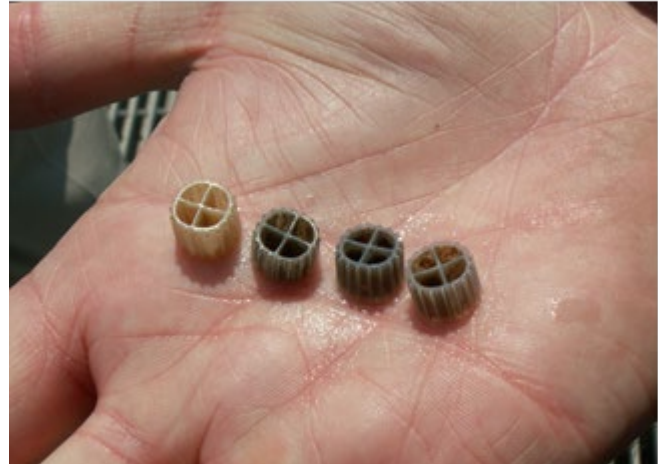
PROJECT OVERVIEW:

The plant modifications to be implemented in this project will serve to intensify the treatment process and allow for enhanced plant performance without expanding the footprint of the facility or adding additional tanks. The recommended treatment methodology, integrated fixed

film activated sludge (IFAS), involves adding a new media to the existing treatment process to permit biological growth that quickly settles to the bottom of the reactors. The carrier is depicted in the photo below. This improved settling process will result in enhanced nitrification, which will greatly increase the plant's performance and permit compliance related to ammonia.

Tetra Tech's recommended approach begins with modeling the updated treatment process. If modeling proves successful, Tetra Tech will provide engineering services to support the implementation of the following processes at the Sand Spring WWTP:

Modifications to PLC Programming
Waste Sludge Draw-Off
Media Fill Fraction*
Aeration Control
Mixer Operation
Raw Sewage Screening



The IFAS process adds High Density Polyethylene media, as depicted here to the process basins.

** NOTE: The carrier specification and quantity of media will be determined and provided by others under a separate procurement contract (see Future Authorizations section below).*

THIS APPROVAL – DESIGN AND CONSTRUCTION PHASE ENGINEERING SERVICES:

LCA intends to retain the services of an engineering consulting firm, Tetra Tech, to provide design and construction related engineering services. The following tasks summarize the professional services to be performed:

1. Process Design
2. Demonstration-System Design
3. Process Equipment Procurement Support
4. Construction Support
5. Start-up and Commissioning Services
6. Demonstration Phase Services
7. Summary Report

Tetra Tech was selected for this work due to their work on the previously completed evaluation study for Sand Spring and their expertise in IFAS design. Due to Tetra Tech's specific qualifications in sewer treatment plant modeling and process improvement, and their familiarity with the compliance challenges LCA faces at the Sand Spring WWTP, the LCA team recommends authorizing Tetra Tech for this work.

FINANCIAL:

The costs for the work in 2023 will be paid for from General Sewer System Improvements project budget. The 2024-2028 Capital Plan that is currently under development will incorporate the expected future costs to be incurred in 2024.

PROJECT STATUS:

Pending Board approval of this work.

FUTURE AUTHORIZATIONS:

Following completion of system modeling and design, additional authorization of approximately \$130,000 will be requested for purchase and installation of equipment and materials.

PROJECT SCHEDULE:

Assuming Board approval at the July 24, 2023 meeting, Notice to Proceed will be issued in July with an estimated completion of design in October 2023 and construction completion by early December 2023. A nine-month demonstration period will follow, and Tetra Tech's work will conclude with a summary report to be issued in November 2024.



July 13, 2023

VIA EMAIL

Albert Capuzzi, Director of Engineering and Asset Management
Lehigh County Authority
1321 Rising Sun Road
Allentown PA 18106

Re: Engineering Services for Sand Spring WWTP - Process Intensification Demonstration

Dear Mr. Capuzzi,

The Sand Spring WWTP receives organic loads substantially higher than it was originally designed to treat. As a result, the system struggles with permit exceedances, especially during winter months. Capacity upgrades require significant capital investment and will take considerable time to implement. Lehigh County Authority (LCA) is considering process intensification by incorporating heavy carrier integrated fixed film activated sludge (IFAS) into their existing sequencing batch reactor (SBR) system to improve nitrification. Heavy carrier IFAS is low cost, relatively easy to implement in a short timeframe, and has the potential to improve permit compliance. However, while this solution is based on sound scientific and technical principles, the concept is unproven and must be demonstrated in order to evaluate efficacy.

Tetra Tech is pleased to submit this proposal for engineering services to LCA for the Sand Spring WWTP – Process Intensification Demonstration. We are excited to support LCA's execution of a successful demonstration study of a heavy carrier IFAS SBR system. Our scope of services and fee, along with our subcontractor Dynamita's proposal for developing a custom model for an SBR with heavy media, are enclosed.

We recommend LCA authorize \$300,000 for the demonstration study. This cost includes Tetra Tech's fee for engineering services, an LCA allowance for procurement and contracting services to install equipment and make modifications necessary for the study, plus a 10% contingency. The cost breakdown is shown below.

Tetra Tech Engineering Services	\$ 173,000
Equipment Procurement and Contractor Install Allowance	\$ 100,000
10% Procurement/Contractor Contingency	\$ 27,000
Total Authorization	\$ 300,000

Tetra Tech is committed to serving LCA through this project and we are delighted to continue building a strong working relationship with your team. We are looking forward to partnering with you to demonstrate a potential solution to improve nitrification at Sand Spring WWTP, particularly during cold weather. Please do not hesitate to contact us with any questions by either calling (303) 570-3174 or emailing jim.mcquarrie@tetrattech.com.

Sincerely,
Tetra Tech, Inc.

Jim McQuarrie, PE
Project Manager

Cc: Rachel Hanson, Senior Project Engineer

Engineering Services

Sand Spring WWTP – Process Intensification Demonstration



SCOPE OF SERVICES

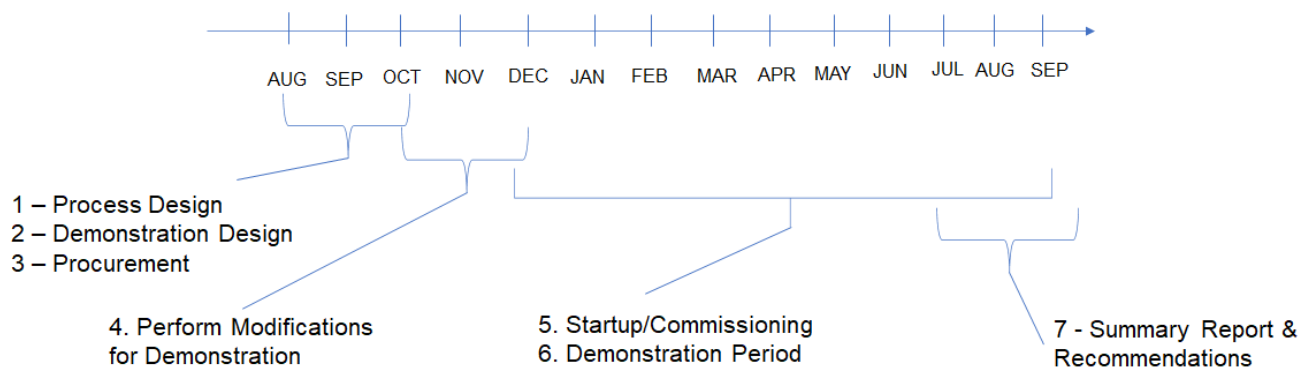
I. Scope of Work

Previous study of the Sand Spring WWTP (WWTP) show that under current overloaded conditions, the existing sequencing batch reactors (SBRs) are unable to maintain compliance during the winter months resulting in ammonia and total nitrogen permit exceedances. In addition, previous study showed that capacity expansion options to address loadings and meet effluent permit limits are expensive and require significant time to implement. In collaboration with Lehigh County Authority (LCA) staff Tetra Tech recommends demonstration of a heavy-carrier IFAS process intensification strategy as a low-cost, quick to implement strategy to improve the performance of the WWTP and reduce the occurrence of permit exceedances. This process intensification strategy is based on industry best practice principles applied to IFAS intensification of continuous flow suspended growth systems to resolve very similar circumstances. However, the heavy-carrier IFAS strategy applied to an SBR configuration is unique and thus warrants demonstration level testing. Tetra Tech will provide the following design, installation, and performance evaluation services to support demonstration of a heavy-carrier integrated fixed film activated sludge (IFAS) process intensification strategy within the SBRs at the WWTP.

Task 0 – Project Management

Task 0.1 Project Work Plan and Schedule

Tetra Tech will prepare a brief project workplan which includes roles and responsibilities of the design team, and LCA staff. The workplan will set the project schedule and setup the check-ins necessary to complete the tasks in a timely manner and within budget. The work plan will be based on the preliminary project schedule for this scope of work with task numbers as shown below.



Task 0.2 Monthly Status Tracking and Invoicing

Tetra Tech's Project Manager will monitor team performance for scope, budget, and schedule. Tetra Tech will submit to City monthly invoiced detailing expenditures incurred in conjunction with the Project. Each invoice will cover a period of one calendar month (or a four-week or five-week duration) and will be submitted to City within six weeks after the end of each billing cycle. The invoice will include the following information:

- Project Title and Number.
- Invoice date.
- Invoice number and billing period.
- Summary of work performed during invoice period, broken down by major project tasks.
- Labor hours and costs charged for the invoice period. Information will be broken down by Task.
- Total cost for each subcontracted service. Information will be summarized by the major Tasks listed in this Scope of Services.
- Remaining funds for Total Project.

Task 1 – Process Design

This first task is focused on developing the design criteria and developing definition around the equipment requirements and modifications required for the heavy-carrier IFAS process intensification strategy. This step includes process model development to guide the development of design and operating criteria requirements.

Task 1.1 Process Definition

Develop design criteria and define process mechanical requirements for heavy-carrier IFAS process. This task includes the sub-contracted service support of Dynamita (see attached) in setting up a biofilm model

coupled with the temporal aspects of an SBR process to estimate the nitrifier abundance on the carriers. This subtask will inform the quantity of media required as well as the targeted DO requirements to drive the needed nitrification rate and the aerated cycle length. This subtask will also define the process mechanical, programming, and I&C requirements for the process.

Task 1.2 Process Definition Technical Memorandum

Task 1.2 Draft and finalize the process definition technical memorandum to serve as the basis of design for Task 2.

Task 1.3 Develop Demonstration Testing Plan

Task 1.3 covers development of the demonstration testing plan that outlines the testing approach, process operating conditions, monitoring activities, data collection, and risks and countermeasures for conducting the demonstration test.

Task 2 – Demonstration System Design

This task develops the drawings and technical requirements to a level suitable for communicating the equipment procurement and modification necessary to install and operate the SBRs with the inclusion of the heavy-carrier IFAS process intensification process.

Task 2.1 Drawings

Utilizing already available electronic files and record drawing archives, develop new drawing set suitable for communicating equipment installation and modifications required to install the heavy-carrier IFAS process to installer/contractor.

Task 2.2 Equipment Selection and Cutsheets

Prepare and assemble cutsheet information for all new equipment to be procured for the heavy-carrier IFAS system. This information will be used to support LCA in soliciting bids from potential suppliers and purchasing of equipment and materials required for system installation following the drawings prepared in subtask 2.1.

Task 2.3 Design Review

Senior QA/QC review of demonstration system design materials and approval of documents for issuance to proceed with procurement and system installation.

Task 3 – Process Equipment Procurement Support

The equipment specified and selected during Task 2 will be procured directly by LCA. The purpose of the scope of work under Task 3 is to support LCA through this equipment procurement stage to ensure consistency with the design requirements and evaluation of responsive bidding.

Task 3.1 Submittal Reviews and Coordination Support

Provide assistance to LCA staff in reviewing submittal information from suppliers to ensure tendered materials and equipment meet the intent of the demonstration design prepared in Task 2. Provide support to LCA staff in coordination of solicitations for materials and equipment.

Task 4 – Construction Support

The equipment installation details, and other modifications detailed during Task 2 will be executed by a contractor and/or by other internal performed means coordinated directly by LCA. The purpose of the scope of work under Task 3 is to support LCA through the equipment installation and modifications to answer technical request for information and any changes identified during installation revealed during performing the work as well as maintenance of plant operations (MOPO) guidance to maintain treatment during installation activities.

Task 4.1 Construction Support

Provide guidance to LCA staff on-site in addressing coordination issues, MOPO complexities, and constructability challenges. Support services under Task 4 do not include resident engineering on site.

Task 5 – Startup and Commissioning

The scope of work under this task is to provide on-site services in terms of coordination of start-up and commissioning activities, process operations adjustment, and startup planning to bring the heavy-carrier IFAS intensification process into full service.

Task 5.1 Startup and Commissioning

Provide daily on-site support in monitoring, process operations, and adjustments as needed to bring the heavy-carrier IFAS process into regular operation. Work with LCA operations staff to establish process control setpoints for consistent operation into the demonstration testing period.

Task 6 – Demonstration Testing

Under this task, Tetra Tech will provide regular check-ins with LCA staff throughout the demonstration phase, to monitor and track process performance information and make recommendations to LCA to optimize performance and/or address any performance.

Task 6.1 Demonstration Testing

Conduct regular progress meetings with LCA staff to support follow-through of demonstration testing plan, review performance and address demonstration test challenges if/as they arise. Initially these progress meetings will be frequent. As the demonstration test settles, the progress meetings will be spaced out to be efficient with time and budget.

Task 7 – Summary Evaluation Report

At the conclusion of the demonstration testing period, Tetra Tech will compile a summary evaluation report that serves as the final deliverable of the project. The summary evaluation report will cover the demonstration testing performance, make recommendations on whether to proceed with permanence of the heavy-carrier IFAS process intensification strategy, and itemize potential design refinements that were identified through the course of the project.

Task 7.1 Draft Report

Compile draft report summarizing the project, findings from demonstration test period, and recommendations for further refinements in the design identified during testing to improve overall performance and/or operability.

Task 7.2 Final Report

Following the review of the draft report, incorporate LCA staff comments into report and finalize.

II. Budget

The following table reflects the budget estimate per task including hours.

Task	Estimated Hours	Task Budget
Task 0 – Project Management	144	\$28,362
Task 1 – Process Design	80	\$14,800
<i>Direct Expenses</i>		\$5,000
Task 2 – Demonstration System Design	276	\$46,680
Task 3 – Process Equipment Procurement Support	40	\$7,240
Task 4 – Construction Support	22	\$4,980
Task 5 – Startup and Commissioning	138	\$31,380
Task 6 – Demonstration Testing	112	\$23,550
Task 7 – Summary Evaluation Report	66	\$10,988
Total	878	\$172,981

III. Assumptions

The following assumptions have been made to develop this Scope of Services and fee.

1. Equipment procurement is conducted directly by LCA.

2. Contracting services to install equipment and make necessary modifications coordinate and conducted directly by LCA. This includes work coordinated and conducted controls integrator and programming.
3. On-site activities associated with demonstration plan are conducted by LCA staff.
4. Turnaround for equipment supply may result in unforeseen delays on the schedule included herein.
5. Temporary modifications are acceptable in this project with the understanding that more permanent modifications may be required long-term if the results are deemed successful by LCA.



10 Laura Crt,
Brampton, ON,
L6S 5E9 Canada
info@dynamita.com

Proposal for Custom Model Development for an SBR with heavy media

Submitted to

Jim McQuarrie, Tetra Tech

Attention: Jim McQuarrie

July 7th, 2023

This proposal is offering custom model development for an SBR with heavy media intended to intensify nitrification capacity.

Project Description

The project consists in developing a customized model of an SBR to account for the enhancements to nitrification capacity from a heavier-than-water biofilm-supporting carrier media.

Schedule

The project is anticipated to begin the last week of July 2023 with final simulation runs being completed prior to the first week of September.

Deliverables

- Customized SumoSlang model file that includes a biofilm model and SBR cycles that can be integrated into the SUMO22 standard library. The SBR reactor will consist of:

- a single, variable volume compartment to capture complete-mix conditions in the SBR reactor.
- the lowering and raising of liquid depth due to the decanter arm, and
- SBR cycles to account for Fill, React, Settle, Decant, Wasting, and Idle phases.
- SUMO “.msumo” file including the customized SumoSlang model file and dynamic simulation results that demonstrate model functionality in a flow configuration with two (2) SBRs operating in parallel,
- Support in guiding Tetra Tech personnel in using the model to run process optimization scenarios for the Sand Spring WWTP.

Budget

The project will be executed at an hourly rate of 150 USD/hr and assuming 33 1/3 hours for a total budget of 5,000.00 USD + applicable taxes.

Invoicing

Dynamita North America Inc. will submit an invoice for the full value of the project upon completion of the project. Dynamita North America Inc. requests payment of invoices within 30 days.

Total budget requested: 5,000 USD + applicable taxes



Tanush Wadhawan

Tanush@dynamita.com

Dynamita North America Inc.

CAPITAL PROJECT AUTHORIZATION

PROJECT NO.:	<u>SD-S-19</u>	BUDGET FUND:	<u>Suburban Div\Wastewater\Capital</u>
PROJECT TITLE:	<u>Suburban Division – Sand Spring WWTP – Process Intensification Study</u>	PROJECT TYPE:	<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Engineering Study <input type="checkbox"/> Equipment Purchase <input type="checkbox"/> Amendment
THIS AUTHORIZATION:	<u>\$192,981</u>		
TO DATE (W/ ABOVE)	<u>\$232,881</u>		

DESCRIPTION AND BENEFITS:

Suburban Division – Study and Demonstration Testing to improve the performance of the Sand Spring WWTP.

The plant modifications to be implemented in this project will serve to intensify the treatment process and allow for enhanced plant performance without expanding the footprint of the facility or adding additional tanks. The recommended treatment methodology, integrated fixed film activated sludge (IFAS), involves adding a new media to the existing treatment process to permit biological growth that quickly settles to the bottom of the reactors. This improved settling process will result in enhanced nitrification, which will greatly increase the plant's performance and permit compliance related to ammonia.

See attached Board Memo for further project details.

Authorization Status:

Requested This Authorization	
Staff	\$10,000
Engineering Consultant	\$172,981
Contingency	10,000
Total This Authorization	\$192,981

Prior Authorizations	\$39,900
Future Authorizations (estimated)	\$130,000
Total Estimated Project	\$362,881

REVIEW AND APPROVALS:

<u>Project Manager</u>	<u>Date</u>	<u>Chief Executive Officer</u>	<u>Date</u>
<u>Chief Capital Works Officer</u>	<u>Date</u>	<u>Chairman</u>	<u>Date</u>



Lehigh County Authority

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

PROFESSIONAL SERVICES AUTHORIZATION

Professional: TETRA TECH, INC.
1560 Broadway, Suite 1400
Denver, CO 80202

Date: July 24, 2023

Requested By: Albert J. Capuzzi

Approvals

Department

Head:

Chief Executive

Officer:

Suburban Division – Sand Spring Wastewater Treatment Plant Process Intensification Design & Construction Phase

Tetra Tech, Inc. will perform the design and construction phase services for the Sand Spring WWTP Process Intensification Program in accordance with their proposal dated 7/13/23, including the following major items of work:

Professional Services
1. Perform process design
2. Perform demonstration level design
3. Provide process equipment procurement support
4. Provide construction support
5. Start-up and commissioning services
6. Demonstration phase services
7. Issue summary report

Design and Construction Phase

This Authorization: \$172,981

PRIOR AUTHORIZATIONS: \$39,900

Total Authorization to Date (not to be exceeded without further authorization): \$212,881

Time Table and Completion Deadline: Construction completion anticipated for Q4 of 2023. Study complete by Q3 2024.











































(For Authority Use Only)

Authorization Completion:

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

**LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS
JUNE 2023**

**LEHIGH COUNTY AUTHORITY
YTD SUMMARY SCORESHEET
JUNE 2023**

	<u>Sub W</u>	<u>Sub WW</u>	<u>City</u>
YTD Net income >0			
YTD Net income >= FC			
YTD Cash Flow >0			
YTD Cash Flow >= FC			
YTD DSCR >= FC			
YTD DSCR >= 1.20			
YTD Operating Ratio >= 1.00			
YTD Operating Ratio >= Budget Target			
YTD Days Cash on Hand >= 180.0			
YTD Operating Revenues >= FC			
YTD Operating Expenses <= FC			
FY FC Net Income >= Budget			
FY FC Cash Flows >=Budget			
FY FC DSCR >= Budget			
TOTAL GREEN	<u><u>14</u></u>	<u><u>9</u></u>	<u><u>13</u></u>

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUMMARY
For the Period Ended June 30, 2023

	Consolidated Financial Statements														
	Month					Year To Date					FULL YEAR				
	Actual	Q2 FC	Prior Year	FC Var	PY Var	Actual	Q2 FC	Prior Year	FC Var	PY Var	Q2 FC	Budget	Prior Year	Bud Var	PY Var
Income Statement															
Suburban Water	191,687	(172,727)	243,473	364,414	(51,786)	1,239,645	790,826	981,117	448,819	258,528	2,360,014	2,169,036	4,140,698	190,977	(1,780,684)
Suburban Wastewater	(448,703)	(532,228)	(212,800)	83,525	(235,903)	53,845	(281,591)	123,280	335,436	(69,435)	(412,374)	2,150,192	(455,127)	(2,562,566)	42,753
City Division	821,725	435,633	530,029	386,091	291,696	6,699,115	5,960,220	3,767,333	738,896	2,931,782	4,584,426	4,780,898	6,545,431	(196,472)	(1,961,005)
Total LCA	564,708	(269,322)	560,702	834,030	4,006	7,992,605	6,469,455	4,871,730	1,523,150	3,120,875	6,532,066	9,100,126	10,231,002	(2,568,060)	(3,698,936)
Cash Flow Statement															
Suburban Water	(859,522)	(1,190,743)	39,560	331,221	(899,082)	4,360,074	4,009,387	678,211	350,687	3,681,862	3,600,137	46,653	543,740	3,553,484	3,056,397
Suburban Wastewater	(474,618)	(801,618)	(793,340)	327,000	318,722	2,902,893	2,575,893	(1,348,311)	327,000	4,251,204	2,252,136	762,612	1,362,181	1,489,524	889,955
City Division	(3,086,609)	(3,402,290)	(4,039,451)	315,680	952,842	7,375,127	6,870,908	(239,041)	504,219	7,614,168	3,201,348	2,671,275	2,809,215	530,073	392,132
Total LCA	(4,420,750)	(5,394,651)	(4,793,232)	973,902	372,482	14,638,094	13,456,187	(909,140)	1,181,906	15,547,234	9,053,621	3,480,540	4,715,136	5,573,081	4,338,485
Debt Service Coverage Ratio															
Suburban Water	1.92	0.80	2.29	1.11	(0.37)	1.98	1.77	1.98	0.21	0.00	2.06	1.83	2.77	0.23	(0.71)
Suburban Wastewater	1.40	0.00	5.44	1.39	(4.04)	8.94	8.01	9.42	0.92	(0.48)	9.20	11.69	9.69	(2.49)	(0.49)
City Division	2.09	1.88	1.98	0.21	0.11	2.32	2.26	2.06	0.07	0.26	2.20	2.10	2.62	0.10	(0.42)

LEHIGH COUNTY AUTHORITY
CONSOLIDATED FINANCIAL STATEMENTS
For the Period Ended June 30, 2023

STATEMENTS OF ACTIVITIES	Consolidated Financial Statements															
	Month				Year To Date				Q2 FULL YEAR FORECAST				Full Year Budget			
	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA	Sub W	Sub WW	City	LCA
Operating Revenues:																
User Charges	1,459,281	1,675,207	4,688,073	7,822,561	7,847,180	9,039,120	25,429,519	42,315,819	16,691,473	18,892,784	50,488,223	86,072,480	16,287,500	21,822,513	50,680,860	88,790,873
Connection & System Charges	35,107	94,636	(116,886)	12,857	205,653	960,581	1,286,913	2,453,147	796,419	1,541,094	4,421,699	6,759,211	680,700	875,600	4,096,600	5,652,900
Other Miscellaneous Revenues	1,949	120	2,940	5,009	36,623	285	62,297	99,205	64,026	2,450	121,197	187,673	31,800	2,300	69,300	103,400
Total Operating Revenues	1,496,337	1,769,964	4,574,127	7,840,428	8,089,456	9,999,986	26,778,729	44,868,171	17,551,918	20,436,328	55,031,119	93,019,365	17,000,000	22,700,413	54,846,760	94,547,173
Operating Expenses:																
Personnel	552,531	228,833	1,310,993	2,092,357	2,049,753	898,542	5,524,184	8,472,480	3,849,242	1,718,938	11,659,603	17,227,783	3,838,376	1,739,145	12,818,583	18,396,104
Shared Services - General & Administrative	97,448	38,534	185,321	321,303	405,632	176,339	1,057,625	1,639,595	851,972	354,954	2,248,803	3,455,729	847,837	353,525	2,197,452	3,398,813
Utilities	21,190	17,036	64,837	103,063	246,254	129,163	1,037,541	1,412,959	447,491	287,233	2,135,769	2,870,493	516,389	312,787	2,018,173	2,847,348
Materials and Supplies	17,532	26,338	252,245	296,115	278,224	192,044	1,437,626	1,907,894	961,564	435,313	3,159,541	4,556,417	887,370	324,100	2,621,000	3,832,470
Miscellaneous Services	291,037	623,365	271,666	1,186,068	1,889,077	3,523,422	843,973	6,256,472	4,584,910	7,287,795	2,191,704	14,064,410	4,610,690	7,212,206	2,112,700	13,935,596
Treatment and Transportation	-	796,079	5,220	801,298	-	2,049,735	5,220	2,054,954	-	3,864,746	14,330	3,879,076	-	4,293,345	14,318	4,307,663
Depreciation and Amortization	258,527	520,529	518,356	1,297,413	1,543,051	3,120,092	3,100,115	7,763,257	3,480,534	6,955,318	6,384,824	16,820,676	3,023,000	6,221,900	6,160,000	15,404,900
Major Maintenance Expenses	-	(788)	6,900	6,112	-	1,680	90,791	92,471	-	21,003	4,000,000	4,021,003	-	25,200	4,000,000	4,025,200
Other Miscellaneous	-	-	-	-	-	-	-	-	41,600	-	-	41,600	41,600	-	-	41,600
Total Operating Expenses	1,238,265	2,249,927	2,615,538	6,103,730	6,411,991	10,091,018	13,097,074	29,600,083	14,217,312	20,925,300	31,794,574	66,937,186	13,765,262	20,482,207	31,942,225	66,189,694
Net Operating Profit	258,073	(479,963)	1,958,589	1,736,698	1,677,465	(91,031)	13,681,654	15,268,088	3,334,606	(488,973)	23,236,545	26,082,179	3,234,738	2,218,206	22,904,535	28,357,479
Non-Operating Income (Expense)																
Interest Income	29,489	37,335	272,868	339,693	149,524	196,235	1,473,873	1,819,632	173,004	195,541	1,051,524	1,420,070	64,782	85,128	128,661	278,572
Interest (Expense)	(95,460)	(12,905)	(1,409,732)	(1,518,098)	(597,347)	(79,629)	(8,456,412)	(9,133,388)	(1,161,335)	(155,495)	(19,703,643)	(21,020,473)	(1,130,484)	(153,143)	(18,252,298)	(19,535,925)
Other Miscellaneous	(415)	6,831	-	6,416	10,003	28,271	-	38,274	13,738	36,551	-	50,290	-	-	-	-
Net Non-Operating Income (Expense)	(66,386)	31,261	(1,136,864)	(1,171,989)	(437,820)	144,876	(6,982,539)	(7,275,483)	(974,593)	76,598	(18,652,119)	(19,550,113)	(1,065,702)	(68,015)	(18,123,637)	(19,257,353)
Net Income (Loss)	191,687	(448,703)	821,725	564,708	1,239,645	53,845	6,699,115	7,992,605	2,360,014	(412,374)	4,584,426	6,532,066	2,169,036	2,150,192	4,780,898	9,100,126
CASH FLOW STATEMENT																
Cash Flows From Operating Activities																
Operating Revenues	1,496,337	1,769,964	4,574,127	7,840,428	8,089,456	9,999,986	26,778,729	44,868,171	17,551,918	20,436,328	55,031,119	93,019,365	17,000,000	22,700,413	54,846,760	94,547,173
Operating Expenses (ex D&A)	(979,738)	(1,730,186)	(2,090,282)	(4,800,205)	(4,868,941)	(6,969,245)	(9,906,169)	(21,744,355)	(10,736,778)	(13,948,980)	(21,409,749)	(46,095,507)	(10,742,262)	(14,235,107)	(21,782,225)	(46,759,594)
Non-Cash Working Capital Changes	(864,574)	(681,052)	369,540	(1,176,086)	(2,845,964)	(1,322,909)	(2,754,518)	(6,923,390)	(222,116)	(3,196)	(1,193,694)	(1,419,007)	(0)	(25,200)	0	(25,200)
Net Cash Provided by (Used in) Operating Activities	(347,974)	(641,274)	2,853,385	1,864,137	374,552	1,707,832	14,118,043	16,200,426	6,593,024	6,484,152	32,427,675	45,504,851	6,257,738	8,440,106	33,064,535	47,762,379
Cash Flows From Financing Activities																
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	6,950,000	-	1,371,118	8,321,118	6,950,000	-	1,400,000	8,350,000	3,950,000	-	1,200,000	5,150,000
Interest Payments	(952)	(12,232)	(5,737,961)	(5,751,145)	(591,376)	(75,183)	(5,737,961)	(6,404,520)	(1,129,937)	(151,832)	(11,788,844)	(13,070,613)	(1,130,484)	(153,143)	(11,788,844)	(13,072,471)
Principal Payments	(6,291)	(47,978)	-	(54,269)	(37,628)	(286,408)	-	(324,036)	(2,287,508)	(576,096)	(3,342,077)	(6,205,681)	(2,344,383)	(575,980)	(3,342,077)	(6,262,440)
Net Cash Provided by (Used in) Financing Activities	(7,243)	(60,211)	(5,737,961)	(5,805,414)	6,320,996	(361,592)	(4,366,843)	1,592,562	3,532,555	(727,928)	(13,730,921)	(10,926,294)	475,133	(729,123)	(13,930,921)	(14,184,911)
Cash Flows from Capital and Related Activities																
Non-Operating Income (Expenses)	(415)	6,831	-	6,416	10,003	28,271	(680,590)	(642,316)	13,738	36,551	(1,361,180)	(1,310,890)	-	-	(1,400,000)	(1,400,000)
Capital Expenditures, net	(533,380)	(310,300)	(474,902)	(1,318,582)	(2,500,001)	(943,027)	(3,169,356)	(6,612,385)	(6,717,184)	(5,518,355)	(15,185,750)	(27,421,290)	(6,751,000)	(7,033,500)	(15,191,000)	(28,975,500)
Net Cash Provided By (Used In) Capital and Related Activities	(533,795)	(303,469)	(474,902)	(1,312,166)	(2,489,998)	(914,756)	(3,849,946)	(7,254,701)	(6,703,446)	(5,481,803)	(16,546,930)	(28,732,180)	(6,751,000)	(7,033,500)	(16,591,000)	(30,375,500)
Cash Flows From Investing Activities																
Investments Converting To Cash	245,000	493,000	-	738,000	739,000	4,887,174	-	5,626,174	494,000	4,887,174	-	5,381,174	-	-	-	-
Purchased Investments	(245,000)	-	-	(245,000)	(734,000)	(2,612,000)	-	(3,346,000)	(489,000)	(3,105,000)	-	(3,594,000)	-	-	-	-
Interest Income	29,489	37,335	272,868	339,693	149,524	196,235	1,473,873	1,819,632	173,004	195,541	1,051,524	1,420,070	64,782	85,128	128,661	278,572
Net Cash Provided By (Used In) Investing Activities	29,489	530,335	272,868	832,693	154,524	2,471,409	1,473,873	4,099,806	178,004	1,977,715	1,051,524	3,207,244	64,782	85,128	128,661	278,572
FUND NET CASH FLOWS	(859,522)	(474,618)	(3,086,609)	(4,420,750)	4,360,074	2,902,893	7,375,127	14,638,094	3,600,137	2,252,136	3,201,348	9,053,621	46,653	762,612	2,671,275	3,480,540
DEBT SERVICE RATIO																
Debt Service Ratio (Indenture Based)																
Total Operating Revenues	1,459,281	1,675,207	4,688,073	7,822,561	7,847,180	9,039,120	25,429,519	42,315,819	16,691,473	18,892,784	50,488,223	86,072,480	16,287,500	21,822,513	50,680,860	88,790,873
Total Operating Expenses (Cash Based)	(979,738)	(1,729,398)	(2,097,182)	(4,806,317)	(4,868,941)	(6,970,926)	(9,996,959)	(21,836,826)	(10,736,778)	(13,969,983)	(21,409,749)	(46,116,510)	(10,742,262)	(14,260,307)	(21,782,225)	(46,784,794)
Interest Income	29,489	37,335	272,868	339,693	149,524	196,235	1,473,873	1,819,632	173,004	195,541	1,051,524	1,420,070	64,782	85,128	128,661	278,572
Annual Lease Payment (City)	-	-	(113,432)	(113,432)	-	-	(680,590)	(680,590)	-	-	(1,361,180)	(1,361,180)	-	-	(1,400,000)	(1,400,000)
Total Non-Operating Revenues (Expenses)	36,641	101,587	(113,946)	24,282	252,279	989,137	1,349,210	2,590,626	915,784	1,580,095	4,542,895	7,038,774	754,100	877,900	4,165,900	5,797,900
Cash Available For Debt Service	545,674	84,732	2,636,382	3,266,788	3,380,042	3,253,566	17,575,053	24,208,661	7,043,483	6,698,438	33,311,713	47,053,634	6,364,120	8,525,235	31,793,196	46,682,551
Interest Paid	94,161	12,653	982,044	1,089,218	564,968	75,916	5,894,422	6,535,307	1,129,937	151,832	11,788,844	13,070,613	1,130,484	153,143	11,788,844	13,072,471
Debt Retirement (Principal Payments)	190,626	48,008	278,506	517,140	1,143,754	288,048	1,671,038	3,102,840	2,287,508	576,096	3,342,077	6,205,681	2,344,383	575,980	3,342,077	6,262,440
Total Debt Service	284,787	60,661	1,260,910	1,606,358	1,708,723	363,964	7,565,461	9,638,147	3,417,445	727,928	15,130,921	19,276,294	3,474,867	729,123	15,130,921	19,334,911
Debt Service Ratio	1.92	1.40	2.09	2.03	1.98	8.94	2.32	2.51	2.06	9.20	2.20	2.44	1.83	11.69	2.10	2.41

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WATER
For the Period Ended June 30, 2023

STATEMENTS OF ACTIVITIES	Suburban - Water														
	Month					Year To Date					Full Year				
	Actual	Q2 FC	Prior Year	FC Var	PY Var	Actual	Q2 FC	Prior Year	FC Var	PY Var	Q2 FC	Budget	Prior Year	Bud Var	PY Var
Operating Revenues:															
User Charges	1,459,281	1,308,170	1,281,714	151,111	177,568	7,847,180	7,688,713	7,154,645	158,467	692,535	16,691,473	16,287,500	16,347,372	403,973	344,101
Connection & System Charges	35,107	33,650	48,714	1,457	(13,607)	205,653	254,609	164,244	(48,956)	41,409	796,419	680,700	653,031	115,719	143,388
Other Miscellaneous Revenues	1,949	2,230	10,651	(281)	(8,701)	36,623	36,736	21,591	(113)	15,032	64,026	31,800	151,924	32,226	(87,898)
Total Operating Revenues	1,496,337	1,344,050	1,341,078	152,287	155,259	8,089,456	7,980,058	7,340,479	109,398	748,977	17,551,918	17,000,000	17,152,327	551,918	399,591
Operating Expenses:															
Personnel	552,531	550,353	298,374	(2,179)	(254,157)	2,049,753	2,047,575	1,655,792	(2,179)	(393,962)	3,849,242	3,838,376	3,020,808	(10,865)	(828,434)
Shared Services - General & Administrative	97,448	78,520	50,885	(18,928)	(46,563)	405,632	419,052	268,937	13,420	(136,694)	851,972	847,837	549,501	(4,135)	(302,471)
Utilities	21,190	19,560	18,251	(1,630)	(2,938)	246,254	224,911	274,280	(21,343)	28,026	447,491	516,389	481,998	68,898	34,507
Materials and Supplies	17,532	101,940	83,055	84,408	65,523	278,224	345,874	411,037	67,649	132,812	961,564	887,370	864,220	(74,194)	(97,343)
Miscellaneous Services	291,037	369,030	286,819	77,993	(4,218)	1,889,077	2,053,520	1,625,888	164,443	(263,189)	4,584,910	4,610,690	3,654,426	25,780	(930,484)
Treatment and Transportation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation and Amortization	258,527	306,817	251,752	48,290	(6,775)	1,543,051	1,639,631	1,505,175	96,580	(37,876)	3,480,534	3,023,000	3,681,806	(457,534)	201,272
Major Maintenance Expenses	-	-	1,493	-	1,493	-	-	4,713	-	4,713	-	-	-	-	-
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	41,600	41,600	156,699	-	115,099
Total Operating Expenses	1,238,265	1,426,220	990,630	187,955	(247,635)	6,411,991	6,730,562	5,745,821	318,570	(666,170)	14,217,312	13,765,262	12,409,458	(452,050)	(1,807,853)
Net Operating Profit	258,073	(82,170)	350,449	340,243	(92,376)	1,677,465	1,249,497	1,594,658	427,968	82,807	3,334,606	3,234,738	4,742,869	99,868	(1,408,262)
Non-Operating Income (Expense)															
Interest Income	29,489	3,650	5,814	25,839	23,676	149,524	123,684	24,716	25,839	124,808	173,004	64,782	103,451	108,222	69,554
Interest (Expense)	(95,460)	(94,207)	(100,455)	(1,253)	4,995	(597,347)	(596,093)	(602,503)	(1,253)	5,157	(1,161,335)	(1,130,484)	(847,133)	(30,851)	(314,202)
Other Miscellaneous	(415)	-	(12,334)	(415)	11,919	10,003	13,738	(35,754)	(3,735)	45,757	13,738	-	141,512	13,738	(127,774)
Net Non-Operating Income (Expense)	(66,386)	(90,557)	(106,976)	24,171	40,590	(437,820)	(458,671)	(613,541)	20,851	175,721	(974,593)	(1,065,702)	(602,171)	91,109	(372,422)
Net Income (Loss)	191,687	(172,727)	243,473	364,414	(51,786)	1,239,645	790,826	981,117	448,819	258,528	2,360,014	2,169,036	4,140,698	190,977	(1,780,684)
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	1,496,337	1,344,050	1,341,078	152,287	155,259	8,089,456	7,980,058	7,340,479	109,398	748,977	17,551,918	17,000,000	17,152,327	551,918	399,591
Operating Expenses (ex D&A)	(979,738)	(1,119,403)	(738,877)	139,665	(240,860)	(4,868,941)	(5,090,931)	(4,240,647)	221,991	(628,294)	(10,736,778)	(10,742,262)	(8,727,652)	5,484	(2,009,126)
Non-Cash Working Capital Changes	(864,574)	(863,926)	(150,762)	(648)	(713,812)	(2,845,964)	(2,843,844)	(817,914)	(2,119)	(2,028,050)	(222,116)	(0)	2,384,609	(222,116)	(2,606,726)
Net Cash Provided by (Used in) Operating Activities	(347,974)	(639,279)	451,439	291,305	(799,413)	374,552	45,283	2,281,919	329,269	(1,907,367)	6,593,024	6,257,738	10,809,284	335,286	(4,216,260)
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	6,950,000	6,950,000	-	-	6,950,000	6,950,000	3,950,000	-	3,000,000	6,950,000
Interest Payments	(952)	(1,009)	(1,071)	57	119	(591,376)	(565,069)	(600,465)	(26,307)	9,089	(1,129,937)	(1,130,484)	(1,200,136)	547	70,199
Principal Payments	(6,291)	(20,621)	(16,934)	14,330	10,643	(37,628)	(66,260)	(101,120)	28,632	63,492	(2,287,508)	(2,344,383)	(1,925,231)	56,875	(362,277)
Net Cash Provided by (Used in) Financing Activities	(7,243)	(21,630)	(18,005)	14,387	10,762	6,320,996	6,318,671	(701,585)	2,326	7,022,581	3,532,555	475,133	(3,125,367)	3,057,422	6,657,922
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	(415)	-	(12,334)	(415)	11,919	10,003	13,738	(35,754)	(3,735)	45,757	13,738	-	(112,090)	13,738	125,828
Capital Expenditures, net	(533,380)	(533,485)	(142,354)	105	(391,026)	(2,500,001)	(2,496,989)	(897,084)	(3,012)	(1,602,917)	(6,717,184)	(6,751,000)	(7,137,538)	33,816	420,354
Net Cash Provided By (Used In) Capital and Related Activities	(533,795)	(533,485)	(154,688)	(310)	(379,107)	(2,489,998)	(2,483,251)	(932,838)	(6,747)	(1,557,160)	(6,703,446)	(6,751,000)	(7,249,628)	47,554	546,182
Cash Flows From Investing Activities															
Investments Converting To Cash	245,000	-	245,000	245,000	-	739,000	494,000	990,000	245,000	(251,000)	494,000	-	990,000	494,000	(496,000)
Purchased Investments	(245,000)	-	(490,000)	(245,000)	245,000	(734,000)	(489,000)	(984,000)	(245,000)	250,000	(489,000)	-	(984,000)	(489,000)	495,000
Interest Income	29,489	3,650	5,814	25,839	23,676	149,524	123,684	24,716	25,839	124,808	173,004	64,782	103,451	108,222	69,554
Net Cash Provided By (Used In) Investing Activities	29,489	3,650	(239,186)	25,839	268,676	154,524	128,684	30,716	25,839	123,808	178,004	64,782	109,451	113,222	68,554
FUND NET CASH FLOWS	(859,522)	(1,190,743)	39,560	331,221	(899,082)	4,360,074	4,009,387	678,211	350,687	3,681,862	3,600,137	46,653	543,740	3,553,484	3,056,397
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	1,459,281	1,308,170	1,281,714	151,111	177,568	7,847,180	7,688,713	7,154,645	158,467	692,535	16,691,473	16,287,500	16,347,372	403,973	344,101
Operating Expenses (Cash Based)	(979,738)	(1,119,403)	(738,877)	139,665	(240,860)	(4,868,941)	(5,090,931)	(4,240,647)	221,991	(628,294)	(10,736,778)	(10,742,262)	(8,727,652)	5,484	(2,009,126)
Interest Income	29,489	3,650	5,814	25,839	23,676	149,524	123,684	24,716	25,839	124,808	173,004	64,782	103,451	108,222	69,554
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	36,641	35,880	47,030	761	(10,389)	252,279	305,084	150,081	(52,804)	102,198	915,784	754,100	946,467	161,684	(30,683)
Cash Available For Debt Service	545,674	228,297	595,680	317,377	(50,006)	3,380,042	3,026,550	3,088,795	353,493	291,247	7,043,483	6,364,120	8,669,637	679,362	(1,626,155)
Interest Paid	94,161	94,161	100,011	-	(5,850)	564,968	564,968	600,068	-	(35,099)	1,129,937	1,130,484	1,200,136	(547)	(70,199)
Debt Retirement (Principal Payments)	190,626	190,626	160,436	-	30,190	1,143,754	1,143,754	962,616	-	181,138	2,287,508	2,344,383	1,925,231	(56,875)	362,277
Total Debt Service	284,787	284,787	260,447	-	24,340	1,708,723	1,708,723	1,562,684	-	146,039	3,417,445	3,474,867	3,125,367	(57,422)	292,078
Debt Service Ratio	1.92	0.80	2.29	1.11	(0.37)	1.98	1.77	1.98	0.21	0.00	2.06	1.83	2.77	0.23	(0.71)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - YTD
For the Period Ended June 30, 2023

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	Q2 FC	FC Var	Comments
7,847,180	7,688,713	158,467	
205,653	254,609	(48,956)	
36,623	36,736	(113)	
8,089,456	7,980,058	109,398	Higher user charges offset by lower system revenues.
2,049,753	2,047,575	(2,179)	
405,632	419,052	13,420	
246,254	224,911	(21,343)	
278,224	345,874	67,649	
1,889,077	2,053,520	164,443	
-	-	-	
1,543,051	1,639,631	96,580	
-	-	-	
-	-	-	
6,411,991	6,730,562	318,570	Lower supplies & services spending along with lower D&A.
1,677,465	1,249,497	427,968	Higher operating revenues and lower operating expenses.
149,524	123,684	25,839	
(597,347)	(596,093)	(1,253)	
10,003	13,738	(3,735)	
(437,820)	(458,671)	20,851	Higher interest income.
1,239,645	790,826	448,819	Higher net income from operations along with higher interest income.
8,089,456	7,980,058	109,398	
(4,868,941)	(5,090,931)	221,991	
(2,845,964)	(2,843,844)	(2,119)	
374,552	45,283	329,269	Higher net operating income.
-	-	-	
6,950,000	6,950,000	-	
(591,376)	(565,069)	(26,307)	
(37,628)	(66,260)	28,632	
6,320,996	6,318,671	2,326	
10,003	13,738	(3,735)	
(2,500,001)	(2,496,989)	(3,012)	
(2,489,998)	(2,483,251)	(6,747)	
739,000	494,000	245,000	
(734,000)	(489,000)	(245,000)	
149,524	123,684	25,839	
154,524	128,684	25,839	Higher interest income.
4,360,074	4,009,387	350,687	Higher cash from operations along with higher interest income.

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - SUBURBAN WASTEWATER
For the Period Ended June 30, 2023

STATEMENTS OF ACTIVITIES	Suburban - Wastewater														
	Month					Year To Date					Full Year				
	Actual	Q2 FC	Prior Year	FC Var	PY Var	Actual	Q2 FC	Prior Year	FC Var	PY Var	Q2 FC	Budget	Prior Year	Bud Var	PY Var
Operating Revenues:															
User Charges	1,675,207	1,226,265	1,145,930	448,942	529,278	9,039,120	8,384,576	7,723,689	654,544	1,315,431	18,892,784	21,822,513	15,021,652	(2,929,729)	3,871,132
Connection & System Charges	94,636	34,990	134,223	59,646	(39,587)	960,581	926,554	1,005,762	34,028	(45,180)	1,541,094	875,600	3,319,169	665,494	(1,778,075)
Other Miscellaneous Revenues	120	-	-	120	120	285	330	135	(45)	150	2,450	2,300	1,585	150	865
Total Operating Revenues	1,769,964	1,261,255	1,280,152	508,709	489,811	9,999,986	9,311,460	8,729,586	688,527	1,270,401	20,436,328	22,700,413	18,342,406	(2,264,085)	2,093,922
Operating Expenses:															
Personnel	228,833	219,010	120,632	(9,823)	(108,202)	898,542	888,719	699,344	(9,823)	(199,198)	1,718,938	1,739,145	1,245,134	20,206	(473,804)
Shared Services - General & Administrative	38,534	32,390	20,615	(6,144)	(17,919)	176,339	179,754	113,535	3,415	(62,804)	354,954	353,525	225,034	(1,429)	(129,920)
Utilities	17,036	28,270	21,181	11,234	4,145	129,163	127,023	151,834	(2,141)	22,671	287,233	312,787	271,866	25,554	(15,367)
Materials and Supplies	26,338	23,020	15,826	(3,318)	(10,512)	192,044	186,473	143,304	(5,572)	(48,740)	435,313	324,100	339,120	(111,213)	(96,193)
Miscellaneous Services	623,365	603,980	529,594	(19,385)	(93,771)	3,523,422	3,450,665	3,189,065	(72,756)	(334,357)	7,287,795	7,212,206	6,503,137	(75,589)	(784,658)
Treatment and Transportation	796,079	357,779	230,000	(438,300)	(566,079)	2,049,735	1,718,074	1,017,547	(331,661)	(1,032,187)	3,864,746	4,293,345	2,846,176	428,599	(1,018,570)
Depreciation and Amortization	520,529	519,616	516,262	(913)	(4,268)	3,120,092	3,118,266	3,097,529	(1,826)	(22,563)	6,955,318	6,221,900	7,090,828	(733,418)	135,510
Major Maintenance Expenses	(788)	2,961	2,958	3,749		1,680	11,862	16,041	10,181	14,360	21,003	25,200	-	4,197	(21,003)
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	86,525	-	86,525
Total Operating Expenses	2,249,927	1,787,026	1,457,068	(462,901)	(792,859)	10,091,018	9,680,835	8,428,199	(410,183)	(1,662,818)	20,925,300	20,482,207	18,607,820	(443,094)	(2,317,480)
Net Operating Profit	(479,963)	(525,771)	(176,915)	45,808	(303,048)	(91,031)	(369,376)	301,386	278,344	(392,418)	(488,973)	2,218,206	(265,414)	(2,707,179)	(223,559)
Non-Operating Income (Expense)															
Interest Income	37,335	6,420	9,819	30,915	27,516	196,235	131,581	32,441	64,653	163,794	195,541	85,128	130,269	110,413	65,273
Interest (Expense)	(12,905)	(12,877)	(15,634)	(29)	2,729	(79,629)	(80,348)	(94,698)	719	15,068	(155,495)	(153,143)	(185,935)	(2,352)	30,440
Other Miscellaneous	6,831	-	(30,069)	6,831	36,900	28,271	36,551	(115,849)	(8,281)	144,120	36,551	-	(134,047)	36,551	170,598
Net Non-Operating Income (Expense)	31,261	(6,457)	(35,885)	37,717	67,145	144,876	87,785	(178,106)	57,091	322,982	76,598	(68,015)	(189,713)	144,613	266,311
Net Income (Loss)	(448,703)	(532,228)	(212,800)	83,525	(235,903)	53,845	(281,591)	123,280	335,436	(69,435)	(412,374)	2,150,192	(455,127)	(2,562,566)	42,753
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	1,769,964	1,261,255	1,280,152	508,709	489,811	9,999,986	9,311,460	8,729,586	688,527	1,270,401	20,436,328	22,700,413	18,342,406	(2,264,085)	2,093,922
Operating Expenses (ex D&A)	(1,730,186)	(1,264,449)	(937,848)	(465,737)	(792,337)	(6,969,245)	(6,550,708)	(5,314,630)	(418,538)	(1,654,615)	(13,948,980)	(14,235,107)	(11,516,992)	286,127	(2,431,988)
Non-Cash Working Capital Changes	(681,052)	(927,062)	(177,486)	246,010	(503,566)	(1,322,909)	(1,322,957)	(491,544)	48	(831,365)	(3,196)	(25,200)	909,713	22,004	(912,909)
Net Cash Provided by (Used in) Operating Activities	(641,274)	(930,256)	164,819	288,982	(806,093)	1,707,832	1,437,795	2,923,412	270,037	(1,215,579)	6,484,152	8,440,106	7,735,127	(1,955,954)	(1,250,975)
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Payments	(12,232)	(12,598)	(11,621)	366	(611)	(75,183)	(75,858)	(71,187)	675	(3,996)	(151,832)	(153,143)	(141,271)	1,311	(10,561)
Principal Payments	(47,978)	(47,947)	(46,819)	(31)	(1,159)	(286,408)	(286,348)	(279,498)	(61)	(6,910)	(576,096)	(575,980)	(562,430)	(116)	(13,666)
Net Cash Provided by (Used in) Financing Activities	(60,211)	(60,545)	(58,440)	334	(1,770)	(361,592)	(362,206)	(350,685)	614	(10,906)	(727,928)	(729,123)	(703,701)	1,195	(24,227)
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	6,831	-	(30,069)	6,831	36,900	28,271	36,551	(115,849)	(8,281)	144,120	36,551	-	(134,047)	36,551	170,598
Capital Expenditures, net	(310,300)	(310,238)	(634,468)	(62)	324,169	(943,027)	(943,003)	(1,841,628)	(24)	898,601	(5,518,355)	(7,033,500)	(3,673,467)	1,515,145	(1,844,888)
Net Cash Provided By (Used In) Capital and Related Activities	(303,469)	(310,238)	(664,538)	6,769	361,068	(914,756)	(906,451)	(1,957,478)	(8,305)	1,042,721	(5,481,803)	(7,033,500)	(3,807,513)	1,551,697	(1,674,290)
Cash Flows From Investing Activities															
Investments Converting To Cash	493,000	493,000	-	-	493,000	4,887,174	4,887,174	2,167,000	-	2,720,174	4,887,174	-	2,906,000	4,887,174	1,981,174
Purchased Investments	-	-	(245,000)	-	245,000	(2,612,000)	(2,612,000)	(4,163,000)	-	1,551,000	(3,105,000)	-	(4,898,000)	(3,105,000)	1,793,000
Interest Income	37,335	6,420	9,819	30,915	27,516	196,235	131,581	32,441	64,653	163,794	195,541	85,128	130,269	110,413	65,273
Net Cash Provided By (Used In) Investing Activities	530,335	499,420	(235,181)	30,915	765,516	2,471,409	2,406,755	(1,963,559)	64,653	4,434,968	1,977,715	85,128	(1,861,731)	1,892,587	3,839,447
FUND NET CASH FLOWS	(474,618)	(801,618)	(793,340)	327,000	318,722	2,902,893	2,575,893	(1,348,311)	327,000	4,251,204	2,252,136	762,612	1,362,181	1,489,524	889,955
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	1,675,207	1,226,265	1,145,930	448,942	529,278	9,039,120	8,384,576	7,723,689	654,544	1,315,431	18,892,784	21,822,513	15,021,652	(2,929,729)	3,871,132
Operating Expenses (Cash Based)	(1,729,398)	(1,267,410)	(940,806)	(461,988)	(788,592)	(6,970,926)	(6,562,569)	(5,330,670)	(408,357)	(1,640,255)	(13,969,983)	(14,260,307)	(11,516,992)	290,324	(2,452,991)
Interest Income	37,335	6,420	9,819	30,915	27,516	196,235	131,581	32,441	64,653	163,794	195,541	85,128	130,269	110,413	65,273
Annual Lease Payment (City)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Revenues (Expenses)	101,587	34,990	104,154	66,597	(2,567)	989,137	963,435	890,047	25,702	99,090	1,580,095	877,900	3,186,707	702,195	(1,606,612)
Cash Available For Debt Service	84,732	265	319,096	84,466	(234,365)	3,253,566	2,917,023	3,315,507	336,543	(61,941)	6,698,438	8,525,235	6,821,636	(1,826,797)	(123,198)
Interest Paid	12,653	12,653	11,773	-	880	75,916	75,916	70,635	-	5,280	151,832	153,143	141,271	(1,311)	10,561
Debt Retirement (Principal Payments)	48,008	48,008	46,869	-	1,139	288,048	288,048	281,215	-	6,833	576,096	575,980	562,430	116	13,666
Total Debt Service	60,661	60,661	58,642	-	2,019	363,964	363,964	351,851	-	12,113	727,928	729,123	703,701	(1,195)	24,227
Debt Service Ratio	1.40	0.00	5.44	1.39	(4.04)	8.94	8.01	9.42	0.92	(0.48)	9.20	11.69	9.69	(2.49)	(0.49)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - YTD
For the Period Ended June 30, 2023

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	Q2 FC	FC Var	Comments	
9,039,120	8,384,576	654,544	Higher municipal, residential/commercial, and hauler revenues	
960,581	926,554	34,028	Higher tapping fees	
285	330	(45)		
9,999,986	9,311,460	688,527	Higher user charges and slightly higher system charges.	
898,542	888,719	(9,823)		
176,339	179,754	3,415		
129,163	127,023	(2,141)		
192,044	186,473	(5,572)		
3,523,422	3,450,665	(72,756)		
2,049,735	1,718,074	(331,661)		
3,120,092	3,118,266	(1,826)		
1,680	11,862	10,181		
-	-	-		
10,091,018	9,680,835	(410,183)	Mostly due to higher treatment & transportation volumes. Other discretionary spending was higher by around \$79k.	
(91,031)	(369,376)	278,344	Higher operating revenues partly offset by higher operating expenses.	
196,235	131,581	64,653		
(79,629)	(80,348)	719		
28,271	36,551	(8,281)		
144,876	87,785	57,091	Higher interest income.	
53,845	(281,591)	335,436	Net net income from operations and higher interest income.	
9,999,986	9,311,460	688,527		
(6,969,245)	(6,550,708)	(418,538)		
(1,322,909)	(1,322,957)	48		
1,707,832	1,437,795	270,037	Higher operating revenues partially offset by higher operating expenses.	
-	-	-		
-	-	-		
(75,183)	(75,858)	675		
(286,408)	(286,348)	(61)		
(361,592)	(362,206)	614		
28,271	36,551	(8,281)		
(943,027)	(943,003)	(24)		
(914,756)	(906,451)	(8,305)		
4,887,174	4,887,174	-		
(2,612,000)	(2,612,000)	-		
196,235	131,581	64,653		
2,471,409	2,406,755	64,653	Higher interest income.	
2,902,893	2,575,893	327,000	Higher cash from operations and higher interest income.	

LEHIGH COUNTY AUTHORITY
FINANCIAL STATEMENTS - CITY DIVISION
For the Period Ended June 30, 2023

STATEMENTS OF ACTIVITIES	City Division														
	Month					Year To Date					Full Year				
	Actual	Q2 FC	Prior Year	FC Var	PY Var	Actual	Q2 FC	Prior Year	FC Var	PY Var	Q2 FC	Budget	Prior Year	Bud Var	PY Var
Operating Revenues:															
User Charges	4,688,073	4,547,207	3,913,947	140,865	774,126	25,429,519	25,337,423	22,325,934	92,096	3,103,585	50,488,223	50,680,860	46,757,244	(192,637)	3,730,979
Connection & System Charges	(116,886)	(161,540)	126,599	44,654	(243,484)	1,286,913	1,242,259	1,928,159	44,654	(641,246)	4,421,699	4,096,600	8,334,971	325,099	(3,913,272)
Other Miscellaneous Revenues	2,940	2,170	6,720	770	(3,780)	62,297	61,527	29,955	770	32,342	121,197	69,300	214,662	51,897	(93,465)
Total Operating Revenues	4,574,127	4,387,837	4,047,266	186,289	526,861	26,778,729	26,641,208	24,284,048	137,521	2,494,681	55,031,119	54,846,760	55,306,877	184,359	(275,758)
Operating Expenses:															
Personnel	1,310,993	1,302,709	878,714	(8,284)	(432,279)	5,524,184	5,515,900	5,604,684	(8,284)	80,500	11,659,603	12,818,583	10,317,615	1,158,980	(1,341,988)
Shared Services - General & Administrative	185,321	214,050	156,410	28,729	(28,911)	1,057,625	1,126,193	785,438	68,568	(272,186)	2,248,803	2,197,452	1,605,755	(51,351)	(643,048)
Utilities	64,837	65,450	155,781	613	90,943	1,037,541	1,001,589	886,795	(35,952)	(150,746)	2,135,769	2,018,173	1,802,290	(117,596)	(333,479)
Materials and Supplies	252,245	359,300	274,499	107,055	22,254	1,437,626	1,544,681	1,026,132	107,055	(411,493)	3,159,541	2,621,000	2,227,858	(538,541)	(931,683)
Miscellaneous Services	271,666	191,550	165,536	(80,116)	(106,130)	843,973	750,934	617,694	(93,039)	(226,279)	2,191,704	2,112,700	1,807,096	(79,004)	(384,608)
Treatment and Transportation	5,220	6,950	5,625	1,730	405	5,220	6,950	5,625	1,730	405	14,330	14,318	11,594	(12)	(2,736)
Depreciation and Amortization	518,356	517,210	521,492	(1,146)	3,136	3,100,115	3,097,823	3,129,036	(2,292)	28,921	6,384,824	6,160,000	6,492,068	(224,824)	107,244
Major Maintenance Expenses	6,900	36,646	8,064	29,746	1,164	90,791	136,126	152,101	45,336	61,311	4,000,000	4,000,000	5,708,208	-	1,708,208
Other Miscellaneous	-	-	-	-	-	-	-	5,200	-	5,200	-	-	-	-	-
Total Operating Expenses	2,615,538	2,693,865	2,166,120	78,327	(449,418)	13,097,074	13,180,196	12,212,706	83,122	(884,368)	31,794,574	31,942,225	29,972,483	147,652	(1,822,090)
Net Operating Profit	1,958,589	1,693,973	1,881,145	264,616	77,444	13,681,654	13,461,012	12,071,341	220,643	1,610,313	23,236,545	22,904,535	25,334,393	332,010	(2,097,848)
Non-Operating Income (Expense)															
Interest Income	272,868	272,700	40,480	168	232,388	1,473,873	1,198,234	59,765	275,639	1,414,108	1,051,524	128,661	914,680	922,863	136,844
Interest (Expense)	(1,409,732)	(1,531,039)	(1,391,596)	121,307	(18,136)	(8,456,412)	(8,699,026)	(8,363,773)	242,614	(92,639)	(19,703,643)	(18,252,298)	(19,703,643)	(1,451,345)	-
Other Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Non-Operating Income (Expense)	(1,136,864)	(1,258,339)	(1,351,116)	121,475	214,252	(6,982,539)	(7,500,792)	(8,304,008)	518,253	1,321,469	(18,652,119)	(18,123,637)	(18,788,962)	(528,482)	136,844
Net Income (Loss)	821,725	435,633	530,029	386,091	291,696	6,699,115	5,960,220	3,767,333	738,896	2,931,782	4,584,426	4,780,898	6,545,431	(196,472)	(1,961,005)
CASH FLOW STATEMENT															
Cash Flows From Operating Activities															
Operating Revenues	4,574,127	4,387,837	4,047,266	186,289	526,861	26,778,729	26,641,208	24,284,048	137,521	2,494,681	55,031,119	54,846,760	55,306,877	184,359	(275,758)
Operating Expenses (ex D&A)	(2,090,282)	(2,140,009)	(1,636,564)	49,727	(453,718)	(9,906,169)	(9,946,247)	(8,931,569)	40,078	(974,599)	(21,409,749)	(21,782,225)	(23,480,415)	372,476	2,070,666
Non-Cash Working Capital Changes	369,540	368,817	(84,406)	723	453,946	(2,754,518)	(2,754,708)	(5,968,768)	191	3,214,251	(1,193,694)	0	(1,754,753)	(1,193,694)	561,059
Net Cash Provided by (Used in) Operating Activities	2,853,385	2,616,646	2,326,295	236,740	527,090	14,118,043	13,940,253	9,383,710	177,790	4,734,332	32,427,675	33,064,535	30,071,709	(636,859)	2,355,967
Cash Flows From Financing Activities															
Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Proceeds New Borrowing	-	-	-	-	-	1,371,118	1,400,000	-	(28,882)	1,371,118	1,400,000	1,200,000	-	200,000	1,400,000
Interest Payments	(5,737,961)	(5,813,938)	(5,755,505)	75,977	17,544	(5,737,961)	(5,813,938)	(5,755,505)	75,977	17,544	(11,788,844)	(11,788,844)	(11,670,361)	-	(118,483)
Principal Payments	-	-	-	-	-	-	-	-	-	-	(3,342,077)	(3,342,077)	(2,514,642)	0	(827,435)
Net Cash Provided by (Used in) Financing Activities	(5,737,961)	(5,813,938)	(5,755,505)	75,977	17,544	(4,366,843)	(4,413,938)	(5,755,505)	47,095	1,388,662	(13,730,921)	(13,930,921)	(14,185,003)	200,000	454,082
Cash Flows from Capital and Related Activities															
Non-Operating Income (Expenses)	-	-	-	-	-	(680,590)	(680,590)	(643,325)	-	(37,265)	(1,361,180)	(1,400,000)	(1,286,651)	38,820	(74,529)
Capital Expenditures, net	(474,902)	(477,698)	(650,721)	2,795	175,819	(3,169,356)	(3,173,052)	(3,283,686)	3,695	114,330	(15,185,750)	(15,191,000)	(12,705,520)	5,250	(2,480,231)
Net Cash Provided By (Used In) Capital and Related Activities	(474,902)	(477,698)	(650,721)	2,795	175,819	(3,849,946)	(3,853,642)	(3,927,011)	3,695	77,065	(16,546,930)	(16,591,000)	(13,992,171)	44,070	(2,554,760)
Cash Flows From Investing Activities															
Investments Converting To Cash	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchased Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income	272,868	272,700	40,480	168	232,388	1,473,873	1,198,234	59,765	275,639	1,414,108	1,051,524	128,661	914,680	922,863	136,844
Net Cash Provided By (Used In) Investing Activities	272,868	272,700	40,480	168	232,388	1,473,873	1,198,234	59,765	275,639	1,414,108	1,051,524	128,661	914,680	922,863	136,844
FUND NET CASH FLOWS	(3,086,609)	(3,402,290)	(4,039,451)	315,680	952,842	7,375,127	6,870,908	(239,041)	504,219	7,614,168	3,201,348	2,671,275	2,809,215	530,073	392,132
DEBT SERVICE RATIO															
Debt Service Ratio (Indenture Based)															
User Charges	4,688,073	4,547,207	3,913,947	140,865	774,126	25,429,519	25,337,423	22,325,934	92,096	3,103,585	50,488,223	50,680,860	46,757,244	(192,637)	3,730,979
Operating Expenses (Cash Based)	(2,097,182)	(2,176,655)	(1,644,628)	79,473	(452,554)	(9,996,959)	(10,082,373)	(9,083,671)	85,414	(913,289)	(21,409,749)	(21,782,225)	(17,772,207)	372,476	(3,637,542)
Interest Income	272,868	272,700	40,480	168	232,388	1,473,873	1,198,234	59,765	275,639	1,414,108	1,051,524	128,661	914,680	922,863	136,844
Annual Lease Payment (City)	(113,432)	(113,432)	(107,221)	-	(6,211)	(680,590)	(680,590)	(643,326)	-	(37,265)	(1,361,180)	(1,400,000)	(1,286,651)	38,820	(74,529)
Non-Operating Revenues (Expenses)	(113,946)	(159,370)	133,319	45,424	(247,264)	1,349,210	1,303,785	1,958,114	45,424	(608,904)	4,542,895	4,165,900	8,549,633	376,995	(4,006,738)
Cash Available For Debt Service	2,636,382	2,370,451	2,335,896	265,931	300,485	17,575,053	17,076,479	14,616,817	498,574	2,958,236	33,311,713	31,793,196	37,162,699	1,518,518	(3,850,986)
Interest Paid	982,404	982,404	972,530	-	9,874	5,894,422	5,894,422	5,835,181	-	59,242	11,788,844	11,788,844	11,670,361	-	118,483
Debt Retirement (Principal Payments)	278,506	278,506	209,554	-	68,953	1,671,038	1,671,038	1,257,321	-	413,717	3,342,077	3,342,077	2,514,642	(0)	827,435
Total Debt Service	1,260,910	1,260,910	1,182,084	-	78,827	7,565,461	7,565,461	7,092,502	-	472,959	15,130,921	15,130,921	14,185,003	(0)	945,918
Debt Service Ratio	2.09	1.88	1.98	0.21	0.11	2.32	2.26	2.06	0.07	0.26	2.20	2.10	2.62	0.10	(0.42)

LEHIGH COUNTY AUTHORITY
VARIANCE ANALYSIS - YTD
For the Period Ended June 30, 2023

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)

City Division				
Actual	Q2 FC	FC Var	Comments	
25,429,519	25,337,423	92,096	Higher industrial/commercial and residential revenues	
1,286,913	1,242,259	44,654	Higher CCR	
62,297	61,527	770		
26,778,729	26,641,208	137,521	Higher user charges and higher system charges.	
5,524,184	5,515,900	(8,284)		
1,057,625	1,126,193	68,568		
1,037,541	1,001,589	(35,952)		
1,437,626	1,544,681	107,055		
843,973	750,934	(93,039)		
5,220	6,950	1,730		
3,100,115	3,097,823	(2,292)		
90,791	136,126	45,336		
-	-	-		
13,097,074	13,180,196	83,122	Lower materials & supplies offset by higher services.	
13,681,654	13,461,012	220,643	Higher operating revenues and overall lower operating expenses.	
1,473,873	1,198,234	275,639		
(8,456,412)	(8,699,026)	242,614		
-	-	-		
(6,982,539)	(7,500,792)	518,253	Higher interest income and lower interest expense.	
6,699,115	5,960,220	738,896	Higher net income from operations aided by higher interest income and lower interest expense.	

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

26,778,729	26,641,208	137,521	
(9,906,169)	(9,946,247)	40,078	
(2,754,518)	(2,754,708)	191	
14,118,043	13,940,253	177,790	Higher operating revenues along with lower operating expenses.
-	-	-	
1,371,118	1,400,000	(28,882)	
(5,737,961)	(5,813,938)	75,977	
-	-	-	
(4,366,843)	(4,413,938)	47,095	Lower debt service.
-	-	-	
(3,169,356)	(3,173,052)	3,695	
(3,169,356)	(3,173,052)	3,695	
-	-	-	
-	-	-	
1,473,873	1,198,234	275,639	
1,473,873	1,198,234	275,639	Higher interest income.
8,055,717	7,551,498	504,219	Higher interest income along with higher cash generated by operations.

LEHIGH COUNTY AUTHORITY
CASH & INVESTMENT SUMMARY
For the Period Ended June 30, 2023

	Suburban Internal Service	Suburban Water				Suburban Wastewater				City Division				Global				Total			
	6/30/2023 Actual	6/30/2023 Actual	2023 Forecast	2023 Budget	2022 Actual	6/30/2023 Actual	2023 Forecast	2023 Budget	2022 Actual	6/30/2023 Actual	2023 Forecast	2023 Budget	2022 Actual	6/30/2023 Actual	2023 Forecast	2023 Budget	2022 Audited	6/30/2023 Actual	2023 Forecast	2023 Budget	2022 Actual
Cash																					
Operating																					
Unrestricted	(494,041)	2,593,091	8,807,233	7,075,935	5,207,096	291,028	3,152,590	4,964,460	900,454	16,697,864	12,209,363	23,660,027	9,008,015	(102,606)	-	-	-	18,985,336	24,169,186	35,700,423	15,115,564
Restricted	-	-	-	-	-	-	-	-	-	21,896,602	25,438,613	18,916,156	25,794,847	-	-	-	-	21,896,602	25,438,613	18,916,156	25,794,847
Total Operating	(494,041)	2,593,091	8,807,233	7,075,935	5,207,096	291,028	3,152,590	4,964,460	900,454	38,594,466	37,647,976	42,576,183	34,802,862	(102,606)	-	-	-	40,881,938	49,607,799	54,616,578	40,910,412
Capital																					
Unrestricted	-	7,292,942	321,054	319,718	321,054	10,317,130	6,862,722	5,955,385	6,862,722	3,440,418	3,022,601	3,022,601	3,022,601	-	-	-	-	21,050,490	10,206,378	9,297,704	10,206,378
Restricted	-	-	-	-	-	339,925	338,677	338,360	338,677	7,554,191	7,500,035	7,500,035	7,500,035	-	-	-	-	7,894,117	7,838,712	7,838,396	7,838,712
Total Capital	-	7,292,942	321,054	319,718	321,054	10,657,055	7,201,399	6,293,745	7,201,399	10,994,609	10,522,636	10,522,636	10,522,636	-	-	-	-	28,944,606	18,045,090	17,136,099	18,045,090
Other Restricted																					
Debt Reserves	-	1,658,759	1,656,568	1,648,569	1,656,568	-	-	-	-	31,090,797	28,335,482	28,976,677	27,979,247	-	-	-	-	32,749,556	29,992,050	30,625,246	29,635,815
Escrow	-	-	218,888	295,372	218,888	56,663	-	-	-	-	32,090	-	32,090	-	-	-	-	56,663	250,978	295,372	250,978
Total Other Restricted	-	1,658,759	1,875,456	1,943,942	1,875,456	56,663	-	-	-	31,090,797	28,367,571	28,976,677	28,011,337	-	-	-	-	32,806,219	30,243,027	30,920,619	29,886,793
Total Cash	(494,041)	11,544,792	11,003,743	9,339,595	7,403,606	11,004,746	10,353,989	11,258,205	8,101,853	80,679,873	76,538,184	82,075,496	73,336,835	(102,606)	-	-	-	102,632,763	97,895,916	102,673,296	88,842,294
Investments																					
Operating																					
Unrestricted	-	1,936,348	1,944,885	1,975,123	1,944,885	6,633,772	7,084,095	6,977,548	8,866,269	-	-	-	-	-	-	-	-	8,570,119	9,028,980	8,952,671	10,811,154
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating	-	1,936,348	1,944,885	1,975,123	1,944,885	6,633,772	7,084,095	6,977,548	8,866,269	-	-	-	-	-	-	-	-	8,570,119	9,028,980	8,952,671	10,811,154
Capital																					
Unrestricted	-	1,039,055	1,000,184	1,000,000	1,000,184	-	-	-	-	-	-	-	-	-	-	-	-	1,039,055	1,000,184	1,000,000	1,000,184
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital	-	1,039,055	1,000,184	1,000,000	1,000,184	-	-	-	-	-	-	-	-	-	-	-	-	1,039,055	1,000,184	1,000,000	1,000,184
Other Restricted																					
Debt Reserves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escrow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Investments	-	2,975,403	2,945,069	2,975,123	2,945,069	6,633,772	7,084,095	6,977,548	8,866,269	-	-	-	-	-	-	-	-	9,609,174	10,029,164	9,952,671	11,811,338
Total Cash and Investments	(494,041)	14,520,194	13,948,812	12,314,718	10,348,675	17,638,518	17,438,084	18,235,753	16,968,122	80,679,873	76,538,184	82,075,496	73,336,835	(102,606)	-	-	-	112,241,938	107,925,080	112,625,967	100,653,633
Summary																					
Cash																					
Unrestricted	(494,041)	9,886,033	9,128,287	7,395,653	5,528,150	10,608,158	10,015,312	10,919,845	7,763,176	20,138,282	15,231,964	26,682,628	12,030,616	(102,606)	-	-	-	40,035,825	34,375,563	44,998,126	25,321,942
Restricted	-	1,658,759	1,875,456	1,943,942	1,875,456	396,589	338,677	338,360	338,677	60,541,590	61,306,220	55,392,868	61,306,219	-	-	-	-	62,596,938	63,520,352	57,675,170	63,520,352
Total Cash	(494,041)	11,544,792	11,003,743	9,339,595	7,403,606	11,004,746	10,353,989	11,258,205	8,101,853	80,679,873	76,538,184	82,075,496	73,336,835	(102,606)	-	-	-	102,632,763	97,895,916	102,673,296	88,842,294
Investments																					
Unrestricted	-	2,975,403	2,945,069	2,975,123	2,945,069	6,633,772	7,084,095	6,977,548	8,866,269	-	-	-	-	-	-	-	-	9,609,174	10,029,164	9,952,671	11,811,338
Restricted	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Investments	-	2,975,403	2,945,069	2,975,123	2,945,069	6,633,772	7,084,095	6,977,548	8,866,269	-	-	-	-	-	-	-	-	9,609,174	10,029,164	9,952,671	11,811,338
Total Cash and Investments	(494,041)	14,520,194	13,948,812	12,314,718	10,348,675	17,638,518	17,438,084	18,235,753	16,968,122	80,679,873	76,538,184	82,075,496	73,336,835	(102,606)	-	-	-	112,241,938	107,925,080	112,625,967	100,653,633

CERTIFICATES OF DEPOSIT

JUNE 2023

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
Cons Wtr (2)	Magnifi Financial CU	Melrose, MN	245,000.00	6/28/23	6/30/25	5.200

DEVELOPMENT ACTIVITY

Water system construction is occurring in the following developments:

7034 Ambassador Drive -Warehouse, UMT
Macungie Crossings Home Depot, LMT
8323/8449 Congdon Hill Drive, 2 industrial lots with warehouses, LMT
ABE Doors & Windows Redevelopment, 1 commercial lot, LMT
Chick-Fil-A Building redesign existing water line staying
Estates at Maple Ridge, Water main extension-UMiIT
Fields at Indian Creek, Phases 4 & 5, 86 residential units (sfd), water and sewer, UMiIT & Emmaus
Fields at Brookside Water Main Re Route. 66 Lots
Heeps Meats 12" Boring tap sleeve and valve UMT
Home Depot Sub Lot Condo unit LMT
Kohler Tract, 123 residential lots (sfa), water and sewer, UMiIT
Laurel Fields Phase 5 25 Residential Townhouses,UMT
Lehigh Hills, Lot 5 Phase 2, 240 residential units (sfd.), UMT
Lehigh Hills Townhouses, 24 townhouse units (sfa), UMT
Mosser Road 10 Townhouses,UMT
Mountain View Estates, 27 residential units (sfd), LMT
Posh Properties 4316,4320,4330,4344 Hamilton Blvd LMT, day care-self storage 4 lots water
Parkland Crossings Main Extension 144 Town homes UMT
Sauerkraut Lane Extension, Roadway & water line extension, LMT
Trexler Point (Towns at Schaefer Run) 128 Townhouses UMT
West Hills Business Center Lot H, 1 commercial lot, WeisT
Green Hills Commerce Center 3 Possible Water Main Extension/Change of plans UMT
3369 Rt 100 Neighborhood Hospital & Medical Offices, 1 commercial lot, LMT
Guardian Self Storage Main Extension 1 commercial lot,LMT
749 Route 100,UMT

Water system plans are being reviewed for the following developments:

7150 Ambassador Drive single connection, UMT
2619 Grove Street Sewer Main Extension,Washington Township
3400 Brookside Road, Indian Creek- 26 Single family homes-Main extension, LMT
3952 Independence Drive,NW
4002 Chestnut Street water main extension,Umilford
Valley at Indian Creek 3510 Macungie Road 22 Single family homes-LMT
5329-5347-5357 Hamilton Blvd., 1 commercial lot, LMT
Advanced Health Care of Allentown, 1 commercial lot, LMT
Air Products & Chemicals-Cetronia Road, 1 commercial lot, UMT
ATAS International, 1 industrial lot, UMT
Bandit Truck Stop Sewer Main Extension, WT
Carriage East Residential Development, 11 residential units, (sfd), UMT
Chick-Fil-A Redevelopment, LMT
Estates at Maple Ridge, 30 residential units (sfd), UMiIT
Fallbrooke Residential Subdivision, 90 sf residential units, UMT
Fields at Brookside, water main relocation, LMT
Fields at Emmaus 78 Town Homes, UMT
Glenlivet Drive West Main extension and subdivision
Grant Street Townes, 18 Townhouse, WT
Green Hills Commerce Center III, 1 commercial lot, UMT
Heidelberg Heights 10 Townhouses water ext on lot septic, HH
Hidden Meadows - Phase 3, 20 townhouse units, UMT
Laurel Field, Phase 5, 25 townhouses, UMT
Macungie Crossings Home Depot, LMT
Madison Village at Penn's View, 66 manufactured homes, 1 lot, water and sewer, LynnT
Mertztown Residential Subdivision, 264 sf units & 136 townhouse units, LMT
Mosser Road Subdivision, 10 sf units, UMT
Raising Canes 1 commercial lot LMT water
Ridings at Parkland, Phase 2, 38 residential units (sfd), NWT
Schoeneck Road, Lot 1, 1 lot, warehouse, LMT
Self-Storage Facility, Cedarbrook Road – 1 Commercial Lot, LMT
Spring Creek Properties, Lot 12, 1 lot, warehouse, LMT
Spring Creek Estates 2022 LMT 2 lots, 2 6 unit Apt, 8 single family homes, water
Taco Bell 248 Route 100-UMT
The Annex at Fields at Indian Creek, 22 sf residential units, Emmaus Borough
Towneplace Suites by Marriott, 91-room hotel, UMT
Towns At Schaefer Run, 128 townhouse unit (sfa), UMT
Trexler Center Unit 5-Wawa-LMT
Twin Ponds 8739 Hamilton Blvd 22 Apts and 1 Daycare UMT
Upper Macungie Community Center UMT commercial lot, water and Main Extension
Woodmont Valley 2, 129 apartment units (former Allen Organ Co.) LMT-New

Sewage Facilities Planning Modules Reviewed in Prior Month:

GPD

Stack Storage Allentown	2118 Hanover Ave	Allentown	70
Fields at Emmaus Subdivision and Land Development	4650 Indian Creek Rd	Upper Milford	0

Presented: July 24, 2023

Critical Activities	System	Description	Jun-23	2023 Totals	2022 Totals	Permit
			Daily Avg (MGD)	Daily Avg (MGD)	Daily Avg (MGD)	Daily Max (MGD)
Water Production	Allentown	Total	24.40	22.64	22.47	39.0
		Schantz Spring	6.29	7.10	6.90	9.0
		Crystal Spring	3.87	3.88	3.87	4.0
		Little Lehigh Creek	14.24	11.63	11.68	30.0
		Lehigh River	0.00	0.03	0.03	28.0
	Central Lehigh	Total	12.77	11.18	11.30	19.04 MGD Avg
		Feed from Allentown	7.85	7.36	7.20	7.0 MGD Avg 10.5 MGD Max
		Well Production (CLD)	4.92	3.81	4.10	8.54 MGD Avg
		Sum of all (12) other Suburban Water Systems	0.15	0.13	0.14	1.71 Sum of all wells
Wastewater Treatment		Kline's Island	30.77	31.58	32.61	40.0
		Pretreatment Plant	4.74	4.79	5.06	5.75 (design capacity)
		Sum of all (5) other Suburban WW Systems	0.17	0.18	0.20	0.36
			Jun-23	2023 Totals	2022 Totals	2021 Totals
Precipitation Totals (inches)			3.98	18.12	46.47	44.67
Compliance Reports Submitted to Allentown			17	155	277	280
Notices of Violation (NOVs)		(Allentown + Suburban)	0	0	4	3
Sanitary Sewer Overflows (SSOs)/Bypasses		(Allentown + Suburban)	0	7	18	26
Main Breaks Repaired		Allentown	1	2	34	20
		Suburban	0	5	15	14
Customer Service Phone Inquiries		(Allentown + Suburban)	1044	5384	10,539	15,857
Water Shutoffs for Non-Payment		(Allentown + Suburban)	227	1002	1,975	1,773
Injury Accidents		(Allentown + Suburban)	2	9	7	8
Emergency Declarations		Allentown	0	0	(3) @ \$386,225.43	0
		Suburban	0	0	(4) @ \$933,077.1	(1) @ \$48,000
Significant Repairs/Upgrades:						
On June 29, 2023, South Mountain Reservoir was brought back online. The reservoir had been out of service since the end of April for routine cleaning, minor repairs, and the installation of four mixers.						
Description of Non-Compliance Events:						
On June 30, 2023, a Boil Water Advisory was issued for 31 customers in the Allentown Division. The advisory was prompted by a main break on Elm Court, leading to reduced water pressures in a specific area. After conducting two consecutive days of coliform sampling and receiving satisfactory results, the advisory was lifted.						
Other:						
In June, two injuries were reported. The first incident involved an employee slipping and tearing a bicep muscle while attempting to break their fall. The second injury was a minor burn caused by contact with a cooking surface.						

Lehigh County Authority
System Operations Review - June 2023

Presented: July 24, 2023

Page 2

<u>Critical Activities</u>	<u>System</u>	<u>Description</u>	<u>Jun-23</u>	<u>2023 Totals</u>	<u>2022 Totals</u>
Wastewater Compliance	Allentown	Bypass	0	1	2
		Bypass Volume	0	1,595	369,704
		Permit Exceedances	0	0	1
		Sanitary Sewer Overflows	0	1	3
		COA Issued NOVs	0	0	1
		Regulatory Agency issued NOVs	0	0	0
	Arcadia	Bypass	0	0	0
		Bypass Volume	0	0	0
		Permit Exceedances	0	0	7
		Sanitary Sewer Overflows	0	0	0
		NOVs	0	0	0
	Heidelberg Heights	Bypass	0	3	8
		Bypass Volume	0	287,040	1,392,261
		Permit Exceedances	0	8	16
		Sanitary Sewer Overflows	0	0	0
		NOVs	0	0	0
	Lynn	Bypass	0	0	2
		Bypass Volume	0	0	472,000
		Permit Exceedances	0	0	7
		Sanitary Sewer Overflows	0	0	1
		NOVs	0	0	0
	Sand Spring	Bypass	0	0	0
		Bypass Volume	0	0	0
		Permit Exceedances	3	23	77
		Sanitary Sewer Overflows	0	0	0
		NOVs	0	0	1
	Wynnewood	Bypass	0	0	0
		Bypass Volume	0	0	0
		Permit Exceedances	0	1	4
		Sanitary Sewer Overflows	0	2	0
		NOVs	0	0	0
Water Compliance	Allentown	Boil Water Advisories	1	1	1
	Central Lehigh	Boil Water Advisories	0	0	2
	Suburban Water Systems	Boil Water Advisories	0	1	4