

## APPENDIX 17

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### *RAFTELIS FINANCIAL MODEL AND COST ALLOCATION ANALYSIS*

# Financial Model and Cost Allocation Analysis

## Introduction

Raftelis was engaged by the Lehigh County Authority (LCA) to develop a financial model that could project the estimated shared revenue requirement of the Kline's Island Sewer System (KISS) and allocate costs to customers. This work followed prior tasks that defined the parameters of an agreeable framework for inter-municipal cost sharing agreements.

The goal of prior phases of work was to maintain accuracy and fairness in KISS cost allocations while simplifying the cost allocation and billing procedures. Key accomplishments of those prior phases included generally agreeing to:

1. Remove pre-treatment plant cost and Excess Removal Credit components from regional cost sharing.
2. Eliminate loadings as a basis for wholesale cost allocations and replace with flow-based allocations.<sup>1</sup>
3. Remove the end of year true-up procedures.

Raftelis proceeded with modeling the KISS System annual revenue requirements and allocating costs to customers based on these preliminary agreement terms using a customized Microsoft Excel-based financial planning model that included cost allocation functionality to estimate the year-by-year revenue requirements and annual cost impacts to each customer. Once estimated, the allocated KISS costs by municipality and by year were blended with projected municipal system local costs to estimate the total annual future sewer cost burdens on the municipalities and their customers over the Act 537 planning period. The cash flow projections were validated with each municipality to ensure that they captured each municipality's local cost and fiscal requirements and financial plan preferences. The resulting projections provide an estimate of the future sewer cost burdens on each municipality and an indication of customer impacts associated with implementation of the Act 537 plan. However, the projections were not intended to reflect the actual future sewer rates associated with each municipality because rate setting requirements and rate structure preferences were not specifically considered in our analysis.

Our financial analysis prepared for the City of Allentown reflects the results of the cost allocation approach selected. However, note that LCA leases parts of the system it operates from the City of Allentown and the parameters of that lease differ from the selected cost allocation approach used to allocate Act 537 plan costs to the City. More specifically, the lease agreement allows LCA to recover the cost of City approved major capital improvements (MCI) from City customers through a capital cost recovery charge (CCRC), while other operating costs and minor capital investments are funded through City sewer rates, where the annual increase in these rates are capped at the rate of change of the Bureau of Labor Statistics Consumer Price Index (CPI) + 2.5%. For customers other than the City, the allocated KISS costs as estimated using the cost allocation approach described

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<sup>1</sup> It is anticipated that loadings will still be involved in commercial/industrial high strength surcharge calculations but those exist outside of the core wholesale cost allocation calculations.

above provides the best estimate of their KISS system cost share, pending approval of the assumptions contained herein and the selected intermunicipal cost sharing approach.

### Assumptions

The projection of future annual KISS costs and each municipality's share of these costs were based on the following assumptions:

Assumption	Description
<b>Beginning Cash Balances</b>	LCA's estimated available net cash balances are managed to cash fund system investments, manage cash flows, and maintain healthy reserves across both water and wastewater services in the City and Suburban Enterprise Funds. This available cash was not deployed in modeling to offset the projected revenue requirement to ensure full cost recovery going forward. Ultimately, LCA may choose to deploy cash differently and at their discretion for rate setting purposes.
<b>Non-Rate Revenues</b>	Two non-rate revenue streams were applied in our modeling based on the inputs provided to offset allocated costs; lab & sampling charges in the amount of \$114,314 for FY2023, which was escalated at a 3% rate of inflation annually, and a grant for the Upper Western Lehigh Pump Station in the amount of \$1,300,000 for FY 2025.
<b>High Strength Surcharge Revenue Offsets</b>	An anticipated commercial/industrial high strength surcharge program and associated revenues were ultimately not addressed in our modeling because the parameters for the program and associated high strength waste contribution data by municipality was unavailable at the time of modeling. It is worth mentioning that this means that costs for customers with high levels of high strength waste may be underestimated, while costs for customers with low levels or zero high strength waste may be overstated in our largely flow-based modeling.
<b>Operating Expenses</b>	Operating expenses were provided by asset category for the treatment plant (KIWWTP), Wester Lehigh Interceptor (WLI), Little Lehigh Relief Interceptor-1 (LLRI-1), Little Lehigh Relief Interceptor-2 (LLRI-2), and City Collection System. Each was escalated at a 3% rate of inflation except for years early in the forecast period where actual, budgeted, or planned/committed costs were known and input directly as provided.
<b>Existing Debt</b>	Amortization tables were input directly for the repayment of revenue bonds, PENNVEST loans, and CCRC-MCI repayments from customers. Revenue bonds were designated as Senior Lien with a 120% debt service coverage target, and PENNVEST loans were designated as Subordinate Lien with a 110% debt service coverage target. None of the forecast years indicated that coverage targets were threatened or that LCA would need additional revenue to achieve them.

Assumption	Description
CIP / New Debt	Raftelis worked to keep the amount pay-as-you-go cash funded capital expenses in proportion to current levels through the planning period, with the balance of investment needs assumed to be either debt financed or cash funded by LCA but recovered from customers on an amortized basis. It happened to be the case at the time of modeling that the City lease debt interest rate which is applied for amortized cost recovery from customers was at the same level as a risk adjusted revenue bond interest rate estimate. That interest rate for the 2019 A-stable rates lease bonds and A-rated 30-year revenue bonds from FMS Bonds +1% to protect against future increases is estimated to be 5.4%.

## Key Inputs

The data inputs used to develop the estimates of the shared KISS Act 537 revenue requirements and year-by-year cost allocation model are described below.

*Table 1: Non-Rate Revenues*

Two sources of non-rate revenue were identified as revenue requirement offsets in modeling. These include Lab & sampling charges and Grants. Lab & sampling charges are a separate charge that was identified on 2023 customer bills provided by LCA for Suburban customers where lab and sampling services are currently provided. Lab & sampling charge revenues are assumed to escalate at a 3% rate of inflation in modeling. One-time grant revenues were noted verbally in conversations with LCA staff as attributable to a specific capital project at the Upper Western Lehigh Pump Station. No further grant revenues are assumed, as though some may be pursued, none were confirmed at the time of modeling. These non-rate revenue sources are detailed in the table below.

Year	Lab & Sampling Charges	Grants	Note
<b>FY 2023</b>	\$114,314	\$-	Each subsequent year of lab and sampling charges is escalated at an assumed 3% rate of inflation.
<b>FY 2024</b>	117,743	1,300,000	Upper Western Lehigh Pump Station
<b>FY 2025</b>	121,275	-	
<b>FY 2026</b>	124,913	-	
<b>FY 2027</b>	128,661	-	
<b>FY 2028</b>	132,521	-	
<b>FY 2029</b>	136,496	-	
<b>FY 2030</b>	140,591	-	
<b>FY 2031</b>	144,809	-	
<b>FY 2032</b>	149,153	-	
<b>FY 2033</b>	153,628	-	
<b>FY 2034</b>	158,237	-	
<b>FY 2035</b>	162,984	-	
<b>FY 2036</b>	167,873	-	
<b>FY 2037</b>	172,909	-	



<b>FY 2038</b>	178,097	-	
<b>FY 2039</b>	183,440	-	
<b>FY 2040</b>	188,943	-	

Operations and maintenance (O&M) costs are detailed in Table 2. Actual 2023 costs were provided by LCA by asset category and escalated at an assumed 3% rate of inflation.

Table 2: O&M Costs<sup>2</sup>

Year	KIWWTP	WLI	LLRI-1	LLRI-2	City Collection System	Total
<b>FY 2023</b>	\$8,548,286	\$1,058,845	\$235,221	\$35,261	\$219,828	\$10,097,440
<b>FY 2024</b>	9,652,585	1,090,610	242,278	36,319	262,612	11,284,404
<b>FY 2025</b>	9,942,163	1,123,329	249,546	37,408	270,491	11,622,937
<b>FY 2026</b>	10,240,428	1,157,029	257,033	38,530	278,606	11,971,625
<b>FY 2027</b>	10,547,641	1,191,739	264,743	39,686	286,964	12,330,773
<b>FY 2028</b>	10,864,070	1,227,492	272,686	40,877	295,573	12,700,697
<b>FY 2029</b>	11,189,992	1,264,316	280,866	42,103	304,440	13,081,718
<b>FY 2030</b>	11,525,692	1,302,246	289,292	43,366	313,573	13,474,169
<b>FY 2031</b>	11,871,462	1,341,313	297,971	44,667	322,980	13,878,394
<b>FY 2032</b>	12,227,606	1,381,553	306,910	46,007	332,670	14,294,746
<b>FY 2033</b>	12,594,434	1,422,999	316,118	47,388	342,650	14,723,588
<b>FY 2034</b>	12,972,267	1,465,689	325,601	48,809	352,929	15,165,296
<b>FY 2035</b>	13,361,436	1,509,660	335,369	50,273	363,517	15,620,255
<b>FY 2036</b>	13,762,279	1,554,950	345,430	51,782	374,423	16,088,863
<b>FY 2037</b>	14,175,147	1,601,598	355,793	53,335	385,655	16,571,528
<b>FY 2038</b>	14,600,401	1,649,646	366,467	54,935	397,225	17,068,674
<b>FY 2039</b>	15,038,413	1,699,135	377,461	56,583	409,142	17,580,734
<b>FY 2040</b>	15,489,566	1,750,109	388,785	58,281	421,416	18,108,157

Cash funded capital by year and by asset category is detailed in Table 3. Using a combination of available cash and debt financing is a common way to fund wastewater utility revenue requirements. Cash can be deployed to avoid interest costs and ensure equity in the system for current customers, while debt financing offers the opportunity to avoid liquidity challenges and rate impacts in the near-term while increasing intergenerational equity in the system. Raftelis has worked to keep cash funded capital levels relatively consistent with current levels as a proportion of total investment in the KISS system as the revenue requirement increases throughout the Act 537 planning period and beyond.

<sup>2</sup> Data sources: 'Cost per kgal – All Signatories – 2023Actuals\_FromJen.xlsx' Consolidated – 2023 ActualsFlows tab as provided by LCA.

Table 3: Cash Funded Capital Costs<sup>3</sup>

Year	KIWWTP	WLI	City Collection System	LLRI (NEW)	KRI	Total
<b>FY 2023</b>	\$2,944,720	\$1,446,298	\$40,863	\$1,500,000	\$-	\$5,931,881
<b>FY 2024</b>	2,505,324	1,489,687	504,440	300,000	87,900	4,887,351
<b>FY 2025</b>	2,661,287	2,900,760	284,088	800,000	-	6,646,135
<b>FY 2026</b>	4,175,115	1,597,936	430,034	-	-	6,203,085
<b>FY 2027</b>	3,901,207	2,050,022	425,669	-	-	6,376,898
<b>FY 2028</b>	2,601,823	3,478,159	499,467	-	-	6,579,449
<b>FY 2029</b>	3,920,609	2,221,144	622,094	-	-	6,763,847
<b>FY 2030</b>	3,762,562	2,418,008	615,243	-	228,539	7,024,352
<b>FY 2031</b>	4,273,376	1,797,049	630,422	-	519,132	7,219,979
<b>FY 2032</b>	2,969,260	1,850,960	685,877	-	3,182,149	8,688,246
<b>FY 2033</b>	2,592,817	2,218,672	641,362	-	3,480,939	8,933,790
<b>FY 2034</b>	3,010,135	2,256,846	650,867	-	3,268,852	9,186,701
<b>FY 2035</b>	5,046,993	2,136,733	1,627,134	-	636,339	9,447,199
<b>FY 2036</b>	4,323,490	6,018,360	295,987	-	-	10,637,837
<b>FY 2037</b>	3,126,740	4,577,681	2,764	-	-	7,707,185
<b>FY 2038</b>	1,122,182	4,715,012	2,847	-	-	5,840,041
<b>FY 2039</b>	967,908	4,856,462	2,932	-	-	5,827,302
<b>FY 2040</b>	609,788	3,000,237	3,020	-	-	3,613,045

Amortized customer costs that are paid back to LCA over time include those tied to revenue bond financing and certain major capital improvements (MCI) for which LCA applied their own available cash but recovers costs from customers over time through a Capital Cost Recovery Charge (CCRC) to reduce rate impacts and generate a rate of return in line with LCA's City lease debt commitments. Table 4 summarizes amortized costs that are based on prior (existing) commitments for the City system.

Table 4: Amortizations of Existing City System Debt and CCRC MCI<sup>4</sup>

Year	2016 AO Bonds	2020 AO Bonds	2014 City AO Loan	2011 Series - Pre-Lease City Project Debt	Sewer CCRC- MCI (No CWSA)	Sewer CCRC-MCI (w/ CWSA)	Total
<b>FY 2023</b>	\$112,029	\$181,448	\$-	\$372,967	\$979,106	\$-	\$1,645,551
<b>FY 2024</b>	112,424	181,457	-	371,420	899,168	-	1,564,470

<sup>3</sup> Data sources: 1) 'Cost per kgal – All Signatories – 2023Actuals\_FromJen.xlsx' Consolidated – 2023 ActualsFlows tab as provided by LCA. 2) Discussions with Allentown and LCA on the best estimate of the shared portion of City Interceptor CCRC SRP expenditures. 3) Raftelis estimates of cash funding that would stay relatively consistent as a proportion of the total revenue requirement as investment in the KISS shared system increased.

<sup>4</sup> Data sources: 1) '2016 AO Bonds - 2020 Refinancing - Signatory DS Cost Sharing - FINAL RECONCILIATION 100720 - UPDATED 010123.xlsx' ACTUAL tab 2) '2020 AO Bonds - 2020 Original Financing - Signatory DS Cost Sharing - FINAL 05-2020 - UPDATED 010123.xlsx' Cost Sharing tab 3) '2024 City AO Loan - Signatory DS Cost Sharing - DRAFT 080924.xlsx' Cost Sharing tab 4) 'PRE-LEASE CITY RPROJECT DEBT.pdf' 5) 'SEWER CCRC - SIGNATORY RATE CALCULATION - OFFICIAL COPY with PAYGO.xlsx' note PAYGO in file name refers to LCA, but customer payback is amortized at the lease rate.

FY 2025	112,722	181,330	229,297	373,349	597,579	693,623	2,187,899
FY 2026	110,003	181,068	229,945	370,826	597,579	1,266,266	2,755,687
FY 2027	110,203	180,669	229,318	-	597,579	1,281,988	2,399,757
FY 2028	110,307	182,177	229,350	-	597,579	1,266,415	2,385,828
FY 2029	110,313	181,439	-	-	597,579	1,266,415	2,155,747
FY 2030	110,223	180,565	-	-	597,579	1,266,415	2,154,782
FY 2031	110,035	181,597	-	-	597,579	1,266,415	2,155,626
FY 2032	112,670	182,426	-	-	597,579	1,266,415	2,159,090
FY 2033	112,190	181,008	-	-	597,579	1,266,415	2,157,193
FY 2034	-	-	-	-	597,579	1,266,415	1,863,994
FY 2035	-	-	-	-	597,579	1,266,415	1,863,994
FY 2036	-	-	-	-	453,636	1,266,415	1,720,051
FY 2037	-	-	-	-	453,636	1,266,415	1,720,051
FY 2038	-	-	-	-	453,636	1,266,415	1,720,051
FY 2039	-	-	-	-	453,636	1,266,415	1,720,051
FY 2040	-	-	-	-	453,636	1,266,415	1,720,051

Tables 5 details amortized existing debt service costs for the Suburban system for prior capital investments where LCA utilized bond financing and plans to include those debt service costs in KISS customer cost allocations. These debt items include one PENNVEST loan and two revenue bonds. PENNVEST is the federally subsidized state revolving loan fund program, which offers low interest loans to water and wastewater utilities throughout the State of Pennsylvania.

Table 5: Existing Suburban Debt<sup>5</sup>

Year	2016 FEB Pennvest WLI	Upper WLI FM Project	Park Pump Station Rehab	Total
FY 2023	\$332,129	\$-	\$167,510	\$499,639
FY 2024	332,129	227,680	167,510	727,319
FY 2025	332,129	227,680	167,510	727,319
FY 2026	332,129	227,680	167,510	727,319
FY 2027	332,129	227,680	167,510	727,319
FY 2028	332,129	227,680	167,510	727,319
FY 2029	332,129	227,680	167,510	727,319
FY 2030	332,129	227,680	167,510	727,319
FY 2031	27,644	227,680	167,510	422,834
FY 2032	-	227,680	167,510	395,190
FY 2033	-	227,680	167,510	395,190
FY 2034	-	227,680	167,510	395,190
FY 2035	-	227,680	167,510	395,190
FY 2036	-	227,680	167,510	395,190
FY 2037	-	227,680	167,510	395,190
FY 2038	-	227,680	167,510	395,190
FY 2039	-	227,680	-	227,680
FY 2040	-	227,680	-	227,680

<sup>5</sup> 1) 'FEB Pennvest Amortization schedule\_WLI signatories.pdf' 2) 'Upper WLI\_FM\_Project\_WLISigs.xlsx' 3) 'PPS Rehab - City Signatory Contribution.xlsx'

The Act 537 Plan includes significant investment in KISS shared facilities. These raw investment costs are detailed in Table 6. In modeling these costs were then escalated to future dollars based on an assumed 3% rate of inflation and funded through a mixture of cash and debt financing.

Table 6: Project Level Detail on Shared Capital Investment Needs for Act 537 Period (Un-escalated 2024 Dollars)<sup>6</sup>

Project	2024	2025	2026	2027	2028	2029	2030
<b>KIWWTP:</b>							
132 MGD Wet Weather Improvements	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Solids Process Improvements	-	-	-	-	-	-	-
Annual/Non-CCRC Projects - City Int	-	18,657	14,190	13,984	14,877	13,572	18,820
Non-CCRC Manholes - City Int	-	94,100	94,100	94,100	94,100	94,100	94,100
Annual/Non-CCRC Projects - Plant	-	2,516,734	1,914,201	1,886,392	2,006,899	1,830,774	2,000,000
Non-CCRC Plant - Plant	-	350,000	950,000	1,000,000	250,000	400,000	300,000
Master Plan Projects (CCRC)	700,000	1,450,000	18,600,000	22,750,000	2,000,000	-	1,500,000
<b>Relief Interceptors:</b>							
KISS Relief	879,000	-	-	-	-	-	230,813
Park PS FM Extension (WWTP)	-	-	-	-	-	-	-
Park PS FM Extension	-	-	-	-	-	-	-
Upper Western Lehigh PS	-	1,300,000	-	-	-	-	-
Western Lehigh Parallel/SCPS Upgrades	-	1,200,000	-	-	-	-	-
<b>Act 537 Plan Prep:</b>							
2024-2026 Efforts	800,000	450,000	200,000	-	-	-	-
Sewer Billing Meter Program	-	-	178,500	178,500	-	-	-
2033 FCS and Remodeling	-	-	-	-	-	-	-
<b>Total</b>	<b>\$2,379,000</b>	<b>\$7,379,491</b>	<b>\$22,200,991</b>	<b>\$28,922,976</b>	<b>\$7,365,876</b>	<b>\$2,638,445</b>	<b>\$4,823,733</b>

In addition to the KISS shared system projects detailed above inflow and infiltration investments in local customer collection systems are planned throughout the region. The majority of these projects are currently planned to be paid for by LCA's customers directly unless otherwise noted. Typically, most customers indicated that they plan to cash fund these projects.

<sup>6</sup> Excludes local inflow & infiltration projects as well as ongoing capex for cash-funded repair and replacement for which project level data was unavailable (those dollars are included in the cash-funded capital Table 3). Data source: '240620 537 Spends.xlsx' file with adjustments and refinements provided in conversations with LCA.

Table 7: Customer Inflow & Infiltration Investments by Year

Customer <sup>7</sup>	2025	2026	2027	2028	2029	2030
CoA <sup>8</sup>	3,000,000	5,000,000	5,000,000	5,250,000	5,250,000	6,000,000
SWT	540,000	540,000	540,000	540,000	540,000	540,000
CWSA <sup>9</sup>	-	25,000	25,000	370,000	370,000	370,000
ST	-	400,000	400,000	400,000	400,000	400,000
EM	-	575,000	-	180,000	550,000	315,000
HAN	-	15,000	-	-	-	-
ALB	-	-	-	-	-	-
LMT	-	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
LHT	-	-	-	-	-	-
MAC	-	-	-	-	-	-
UMT	1,250,000	1,000,000	1,000,000	750,000	750,000	250,000
UMiT	-	200,000	-	-	-	-
WEIS	-	-	-	-	-	-
LCA	-	250,000	3,000,000	3,000,000	300,000	680,000
<b>Total</b>	<b>4,790,000</b>	<b>9,505,000</b>	<b>11,465,000</b>	<b>11,990,000</b>	<b>9,660,000</b>	<b>10,055,000</b>

Table 8 details the cost allocation percentages used for each asset group as well as the unique allocations that were applied in select cases where certain customers prepaid for a given completed debt financed investment and are therefore excluded from ongoing debt service. All of the costs are based on percentages of flow other than for KISS Relief Interceptor (KRI) investments, for which adjusted flow-miles were the basis of allocations.

Table 8: Cost Share Allocation Percentages by Asset Category and by Customer

Customer <sup>10</sup>	Flow (MG)	KIWWTP	OTHER (NON-CITY)	NO CWSA	CIT INT	KRI <sup>11</sup>	WLI	LLRI (OLD)	LLRI (NEW)
CoA	5,904.3	50.1%	N/A	53.4%	50.1%	14.6%	N/A	N/A	N/A
SWT	757.1	6.4%	12.9%	6.9%	6.4%	5.5%	N/A	N/A	N/A
CWSA	725.2	6.2%	12.4%	N/A	6.2%	2.2%	N/A	N/A	N/A
ST	576.3	4.9%	9.8%	5.2%	4.9%	5.6%	N/A	N/A	N/A
EM	390.6	3.3%	6.7%	3.5%	3.3%	6.0%	N/A	N/A	N/A
HAN	25.9	0.2%	0.4%	0.2%	0.2%	N/A	N/A	N/A	N/A
SWT-LLRI	319.1	N/A	N/A	N/A	N/A	N/A	N/A	39.7%	7.8%
ST-LLRI	179.7	N/A	N/A	N/A	N/A	N/A	N/A	22.3%	4.4%
EM-LLRI	201.9	N/A	N/A	N/A	N/A	N/A	5.6%	25.1%	4.9%
LMT PII-LLRI	103.8	0.9%	1.8%	0.9%	0.9%	2.0%	2.9%	12.9%	2.5%

<sup>7</sup> Customer abbreviations were used to save space in this and select other tables. Certain City Signatories have portions of their flow that for which LLRI costs are allocated hence the lines marked “-LLRI”.

<sup>8</sup> Portions of the City collections systems are utilized as shared assets and as such costs are shared with other LCA customers and with LCA directly.

<sup>9</sup> Work is planned in Whitehall but not Coplay or North Whitehall.

<sup>10</sup> Customer abbreviations were used to save space in the table. Certain City Signatories have portions of their flow that for which LLRI costs are allocated hence the lines marked “-LLRI”.

<sup>11</sup> Flow-miles percentages were sourced from ‘KISS IMA - Discussion Notes - 061924 - UPDATED 080224.docx’

ALB	57.0	0.5%	1.0%	0.5%	0.5%	1.1%	1.6%	N/A	1.4%
LMT	637.0	5.4%	10.9%	5.8%	5.4%	12.4%	17.7%	N/A	15.6%
LHT	2.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	N/A	0.1%
MAC	74.8	0.6%	1.3%	0.7%	0.6%	1.5%	2.1%	N/A	1.8%
UMT	1,845.2	15.7%	31.4%	16.7%	15.7%	35.9%	51.3%	N/A	45.0%
UMiT	76.0	0.6%	1.3%	0.7%	0.6%	1.5%	2.1%	N/A	1.9%
WEIS	11.6	0.1%	0.2%	0.1%	0.1%	0.2%	0.3%	N/A	0.3%
BB	509.6	4.3%	8.7%	4.6%	4.3%	9.9%	14.2%	N/A	12.4%
WH	75.7	0.6%	1.3%	0.7%	0.6%	1.5%	2.1%	N/A	1.8%
HILT	2.8	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	N/A	0.1%
Total	11,775.1	100%	100%	100%	100%	100%	100%	100%	100%

## Municipal Impacts

Once the various allocations were applied to costs by asset category as appropriate for each subset of customers that participates in each asset category a total KISS allocation was developed for each customer. These KISS allocations by customer were then combined with local customer financials to develop projections of the impact of the Act 537 Plan on each customer. The tables and charts that follow for each customer were developed by Raftelis and refined through collaborative discussions with each customer but do not represent rate modeling results, which will vary over time as investments are made and cash and rate design decisions are undertaken by each community.

February 17, 2025

Mr. Brian Chamberlain  
Compliance Auditor  
City of Allentown  
641 S. 10<sup>th</sup> Street  
Allentown, PA 18103

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cash Flow Projections**

Dear Mr. Chamberlain:

Raftelis is pleased to provide this summary report for the City of Allentown (City) as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The summary provides projections of the cash flow needs of the signatories for funding the KISS Act 537 Plan. The purpose of preparing the cash flow projections was to demonstrate current and future financial sufficiency of the KISS and its signatories to the Pennsylvania Department of Environmental Protection (PADEP), particularly given the need for capital upgrades at the KISS wastewater treatment plant.

Several steps were completed to prepare the cash flow projections. We first built a financial model for the KISS system and prepared cash flow projections from operating expenses and identified future capital expenditures. The cash flow needs were then allocated proportionally to all the signatories based on flow. We then developed simplified cashflow models for each of the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to explain the purpose of the projections, verify data, identify any signatory-specific fiscal requirements or targets (e.g., cash reserves and debt service coverage), and discuss projected rate adjustments that may be necessary to satisfy the cash flow needs. We then finalized each community’s financial projections and developed dashboards to visualize the results.

Please find attached a summary of the cash flow projections that were prepared for the City. These projections are not meant to contain analyses in sufficient detail to take the place of full rate studies nor to make specific rate recommendations. Rather, they are meant to provide a high-level assessment of the future financial sufficiency of paying for the KISS Act 537 Plan.

Key assumptions that were made for the City include the following:

- The City’s lease of the system to LCA includes terms that cause the City billings to deviate from the pure cost allocation approach applied to other customers (i.e., the signatories).
- Per the lease, Major Capital Improvements (MCI) are recovered at cost as allocated and recovered via a Capital Cost Recovery Charge (CCRC). These costs are amortized over time. LCA has the option to pay for these projects with debt or cash; currently, all cash costs are amortized for cost recovery with an interest rate applied that mirrors the cost of debt at the time of the lease agreement.
- Non-MCI costs are recovered through Service Charges that are limited to the Bureau of Labor Statistics Consumer Price Index for all Urban Customers (BLS CPI-U) in the Northeast Region + 2.5% through 2032 and 2% thereafter.

- LCA's City Fund financials and debt issuance are jointly managed across both water supply and wastewater services and as such, we have provided projections for the City (attached) that follow this fund structure. This applies to the charts for Revenue, Revenue Requirement, and Debt Service.
- The Capital Investment chart provided attached is consistent with the same charts prepared for other signatories in that it focuses on City only wastewater investment costs presented in un-escalated (2024 dollars) and includes projected capital expenditures related to the removal of inflow and infiltration in the unshared portion of the City collection system. However, due to blended debt issuances across services and financing of certain KISS shared improvements, the attached debt service chart for the City includes water and wastewater debt and covers certain shared and unshared projects.
- Income data was sourced from the U.S. Census Bureau for 2023 (the latest year that U.S. Census Data was available) and was escalated to the current year using an assumed income inflation factor.

If you have any comments or questions pertaining to the projections provided attached to this letter, please let me know. We enjoyed working with you and we thank you and the City's staff for the support provided during this project.

Sincerely,

**Zachary Green**  
*Project Manager*



## Lehigh County Authority - Allentown Division: Wastewater Financial Modeling Assumptions

	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>
Lease Concession Increase %	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.00%	2.00%	2.00%
CPI Increase % (Inflation)	3.00%	3.00%	2.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
CPI Cumulative Increase	1.0300	1.0609	1.0874	1.1092	1.1314	1.1540	1.1771	1.2006	1.2246	1.2491	1.2741

### Other Key Assumptions:

- All revenue estimates and projections provided by Lehigh County Authority, using the 2024 Budget as the baseline for these projections
- Cost sharing for all wastewater Major Capital Improvements calculated based on flow, per the intermunicipal agreement term sheet currently under consideration
- Flow-based billing for Major Capital Improvements is based on 2023 actual flows per municipality
- Future flows have not been predicted but will be impacted by growth and effective I&I removal efforts
- Administrative Order fees (AO fee) charged to City customers is excluded from the rate projection, as the AO fee is not captured as revenue to LCA

## LCA Allentown Division - Lease Revenues Analysis KISS IMA Impact - 2/17/2025

RAFTELIS ANALYSIS - LEASE REVENUES & FINANCIAL METRICS	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
<b>Revenues</b>										
Operating & Nonoperating Revenues										
Total Operating & Nonoperating Revenues (less signatory revenues)	56,321,967	60,373,027	64,517,587	68,623,738	71,956,104	75,528,829	79,234,169	82,858,776	86,744,990	90,833,420
Existing Signatory Revenue Projection	9,451,409	10,348,576	11,223,103	12,115,121	12,614,818	13,124,509	13,644,394	14,174,677	14,715,565	15,267,271
Total Operating & Nonoperating Revenues (System Revenues)	65,773,376	70,721,603	75,740,690	80,738,860	84,570,923	88,653,338	92,878,563	97,033,453	101,460,555	106,100,691
<i>Adjustments</i>										
Existing Signatory Revenue Projection	(9,451,409)	(10,348,576)	(11,223,103)	(12,115,121)	(12,614,818)	(13,124,509)	(13,644,394)	(14,174,677)	(14,715,565)	(15,267,271)
Revised City Signatory Revenue Projection	8,957,453	8,747,817	9,677,842	10,889,803	11,075,183	11,877,780	13,388,246	12,972,915	13,932,988	15,398,031
<b>Adjusted System Revenues</b>	<b>65,279,420</b>	<b>69,120,844</b>	<b>74,195,429</b>	<b>79,513,541</b>	<b>83,031,288</b>	<b>87,406,609</b>	<b>92,622,415</b>	<b>95,831,691</b>	<b>100,677,978</b>	<b>106,231,451</b>
\$ Change	(493,956)	(1,600,759)	(1,545,261)	(1,225,319)	(1,539,635)	(1,246,730)	(256,148)	(1,201,761)	(782,577)	130,761
% Change	-0.8%	-2.3%	-2.0%	-1.5%	-1.8%	-1.4%	-0.3%	-1.2%	-0.8%	0.1%
<b>Expenses</b>										
Expenses										
Operating Expenses	(26,360,942)	(27,283,575)	(28,102,082)	(28,945,144)	(29,813,498)	(30,707,903)	(31,629,140)	(32,578,014)	(33,555,354)	(34,562,015)
Annual Payments to COA	(1,394,632)	(1,429,498)	(1,458,088)	(1,487,250)	(1,516,995)	(1,547,335)	(1,578,281)	(1,609,847)	(1,642,044)	(1,674,885)
Debt Service	(18,783,714)	(20,891,467)	(24,375,714)	(25,484,733)	(26,557,026)	(27,575,741)	(28,640,237)	(29,740,495)	(29,928,777)	(32,538,342)
Total Before Capex	(46,539,288)	(49,604,540)	(53,935,884)	(55,917,127)	(57,887,518)	(59,830,979)	(61,847,659)	(63,928,356)	(65,126,175)	(68,775,242)
Expense Adjustments										
Future Debt (Allocated Act 537 Assumptions)	66,563	331,836	726,123	880,697	1,024,691	1,150,770	1,278,472	1,408,960	1,559,897	1,714,501
Revised Future Debt (For Act 537)	(328,797)	(1,655,891)	(3,448,314)	(3,649,607)	(3,649,607)	(3,717,206)	(3,748,865)	(4,113,512)	(5,216,801)	(6,507,938)
<b>Revised Expenses</b>	<b>(46,801,523)</b>	<b>(50,928,596)</b>	<b>(56,658,076)</b>	<b>(58,686,037)</b>	<b>(60,512,434)</b>	<b>(62,397,415)</b>	<b>(64,318,052)</b>	<b>(66,632,907)</b>	<b>(68,783,078)</b>	<b>(73,568,679)</b>
<b>Cash Available for CAPEX</b>	<b>23,205,194</b>	<b>24,708,264</b>	<b>26,055,218</b>	<b>31,214,781</b>	<b>33,903,522</b>	<b>37,528,990</b>	<b>41,984,688</b>	<b>44,133,551</b>	<b>48,253,064</b>	<b>50,550,217</b>
Total Revenues	65,279,420	69,120,844	74,195,429	79,513,541	83,031,288	87,406,609	92,622,415	95,831,691	100,677,978	106,231,451
Less OPEX and City Payment	(27,755,574)	(28,713,073)	(29,560,170)	(30,432,394)	(31,330,493)	(32,255,238)	(33,207,421)	(34,187,861)	(35,197,398)	(36,236,900)
Revenues Available for Debt Service	37,523,846	40,407,771	44,635,259	49,081,147	51,700,795	55,151,371	59,414,993	61,643,830	65,480,580	69,994,552
Debt Service	19,045,948	22,215,523	27,097,906	28,253,643	29,181,941	30,142,177	31,110,631	32,445,047	33,585,680	37,331,779
Debt Service Coverage	1.97	1.82	1.65	1.74	1.77	1.83	1.91	1.90	1.95	1.87

LEHIGH COUNTY AUTHORITY  
CITY DIVISION  
LONG-TERM CASH FLOW PROJECTIONS

City Rate Increases Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
<b>LCA Analysis Water</b>											
City W Rate Payer User Charges	26,531,082	27,990,292	29,389,807	30,712,348	32,094,403	33,538,652	35,047,891	36,625,046	38,090,048	39,613,650	41,198,196
City W CCRC	1,327,200	2,105,295	2,924,208	3,778,157	5,243,357	5,905,595	6,581,077	7,270,068	7,972,840	8,689,667	9,420,830
Total City Water	27,858,282	30,095,587	32,314,015	34,490,505	37,337,761	39,444,246	41,628,968	43,895,114	46,062,888	48,303,316	50,619,026
		8.0%	7.4%	6.7%	8.3%	5.6%	5.5%	5.4%	4.9%	4.9%	4.8%
<b>Raftelis Analysis Wastewater</b>											
City WW Rate Payer User Charges	14,999,165	15,824,119	16,615,325	17,363,015	18,144,351	18,960,847	19,814,085	20,705,718	21,533,947	22,395,305	23,291,117
Existing City WW CCRC	872,170	872,170	872,170	872,170	872,170	872,170	872,170	872,170	872,170	872,170	872,170
Revised New City WW CCRC	-	205,751	1,175,557	2,323,457	2,727,668	3,062,823	3,522,468	3,994,005	4,545,677	5,252,247	6,050,363
Total City Wastewater	15,871,335	16,902,041	18,663,052	20,558,642	21,744,189	22,895,840	24,208,723	25,571,894	26,951,794	28,519,722	30,213,651
		6.5%	10.4%	10.2%	5.8%	5.3%	5.7%	5.6%	5.4%	5.8%	5.9%
<b>Combined Water and Wastewater</b>											
Water	27,858,282	30,095,587	32,314,015	34,490,505	37,337,761	39,444,246	41,628,968	43,895,114	46,062,888	48,303,316	50,619,026
Wastewater	15,871,335	16,902,041	18,663,052	20,558,642	21,744,189	22,895,840	24,208,723	25,571,894	26,951,794	28,519,722	30,213,651
Combined	43,729,618	46,997,627	50,977,067	55,049,147	59,081,949	62,340,086	65,837,690	69,467,008	73,014,681	76,823,038	80,832,677
		7.5%	8.5%	8.0%	7.3%	5.5%	5.6%	5.5%	5.1%	5.2%	5.2%

## Lehigh County Authority - Allentown Division: Wastewater Capital Cost Recovery Charge Projection

### CCRC PROJECTS (\$ are escalated costs)

Project	Category	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
LCA Capital Plan Projects	Non-537 KIWWTP Projects	\$ 721,000	\$ 8,168,930	\$ 7,611,958	\$ 2,218,342	\$ -	\$ 1,730,972	\$ 1,765,592	\$ 1,800,903	\$ 1,836,922	\$ 1,873,660	\$ 1,911,133
KIWWTP Wet-Weather Upgrades	Act 537 NEW	\$ 772,500	\$ 11,563,810	\$ 17,126,904	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,107,954	\$ 602,726	\$ 768,477
KISS Relief Interceptor (KRI)	Act 537 NEW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 266,354	\$ 543,362	\$ 5,542,295	\$ 11,306,280	\$ 11,532,406	\$ 1,176,305
Park Pump Station Force Main Extension	Act 537 NEW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 620,316	\$ 2,097,297	\$ 4,937,428	\$ 5,652,950
City I&I Source Reduction Program*	City SRP	\$ 2,275,406	\$ 4,365,837	\$ 4,474,983	\$ 4,828,755	\$ 4,925,330	\$ 5,848,683	\$ 5,965,657	\$ 6,084,970	\$ 6,206,670	\$ 6,330,803	\$ 6,457,419
<b>TOTAL</b>		<b>\$ 3,768,906</b>	<b>\$ 24,098,577</b>	<b>\$ 29,213,845</b>	<b>\$ 7,047,097</b>	<b>\$ 4,925,330</b>	<b>\$ 7,846,009</b>	<b>\$ 8,274,611</b>	<b>\$ 14,048,485</b>	<b>\$ 22,555,122</b>	<b>\$ 25,277,023</b>	<b>\$ 15,966,284</b>

### ANNUAL COST RECOVERY - TOTAL

Assumed Interest Rate: 5.40%

Project	Method	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
LCA Capital Plan Projects	KIWWTP Flow-Based	\$ 49,062	\$ 555,874	\$ 517,973	\$ 150,952	\$ -	\$ 117,788	\$ 120,144	\$ 122,547	\$ 124,998	\$ 127,497
KIWWTP Wet-Weather Upgrades	KIWWTP Flow-Based	\$ 52,567	\$ 786,886	\$ 1,165,439	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 75,393	\$ 41,014
KISS Relief Interceptor (KRI)	KRI Allocation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,125	\$ 36,974	\$ 377,138	\$ 769,362	\$ 784,749
Park Pump Station Force Main Extension	KIWWTP Flow-Based	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 42,211	\$ 142,715	\$ 335,979
City I&I Source Reduction Program*	City Only - No Signatory Sharing	\$ 154,835	\$ 297,083	\$ 304,510	\$ 328,584	\$ 335,155	\$ 397,987	\$ 405,947	\$ 414,066	\$ 422,347	\$ 430,794
<b>TOTAL</b>		<b>\$ 256,464</b>	<b>\$ 1,639,843</b>	<b>\$ 1,987,923</b>	<b>\$ 479,536</b>	<b>\$ 335,155</b>	<b>\$ 533,900</b>	<b>\$ 563,065</b>	<b>\$ 955,961</b>	<b>\$ 1,534,815</b>	<b>\$ 1,720,033</b>

### ANNUAL COST RECOVERY - CITY SHARE

Project	City Share	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
LCA Capital Plan Projects	50.1%	\$ 24,580	\$ 278,493	\$ 259,505	\$ 75,627	\$ -	\$ 59,012	\$ 60,192	\$ 61,396	\$ 62,624	\$ 63,876
KIWWTP Wet-Weather Upgrades	50.1%	\$ 26,336	\$ 394,230	\$ 583,885	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,772	\$ 20,548
KISS Relief Interceptor (KRI)	14.6%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,646	\$ 5,398	\$ 55,062	\$ 112,327	\$ 114,573
Park Pump Station Force Main Extension	50.1%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,148	\$ 71,500	\$ 168,325
City I&I Source Reduction Program*	100.0%	\$ 154,835	\$ 297,083	\$ 304,510	\$ 328,584	\$ 335,155	\$ 397,987	\$ 405,947	\$ 414,066	\$ 422,347	\$ 430,794
<b>TOTAL</b>		<b>\$ 205,751</b>	<b>\$ 969,806</b>	<b>\$ 1,147,900</b>	<b>\$ 404,211</b>	<b>\$ 335,155</b>	<b>\$ 459,645</b>	<b>\$ 471,537</b>	<b>\$ 551,671</b>	<b>\$ 706,570</b>	<b>\$ 798,117</b>

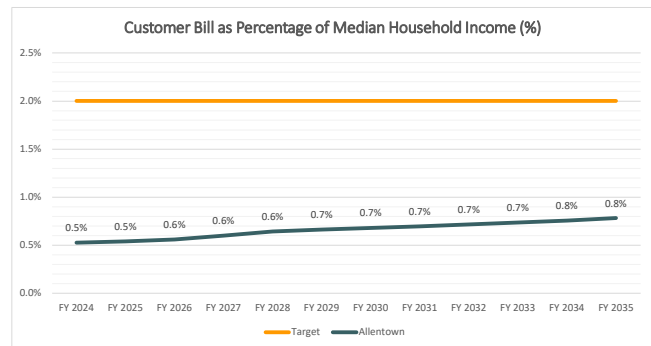
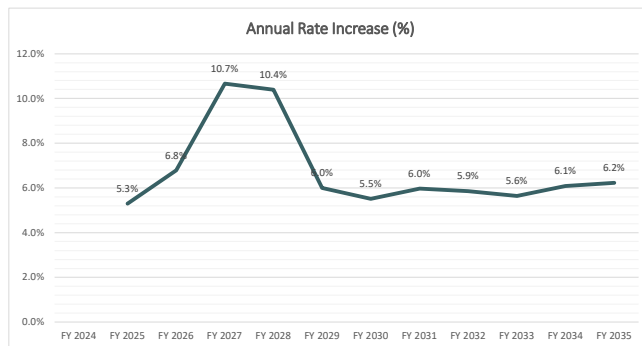
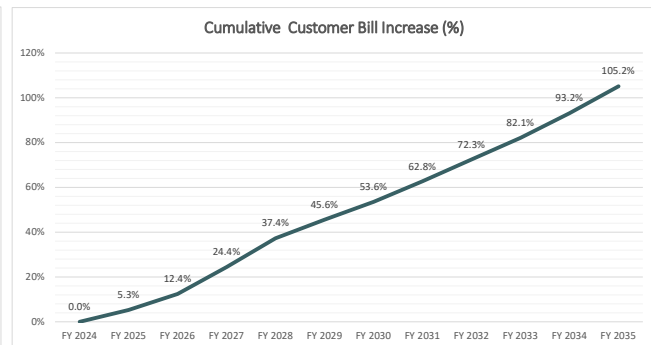
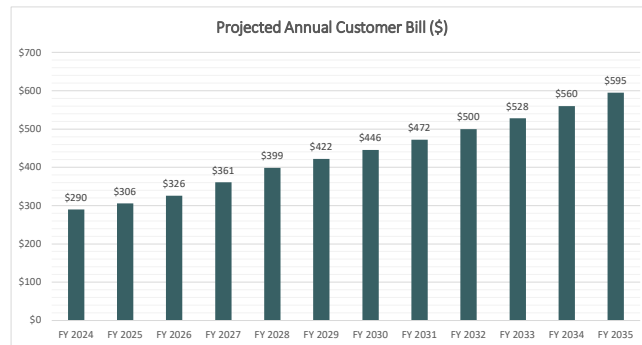
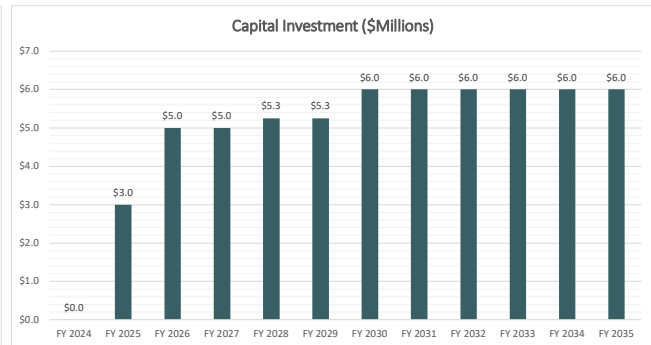
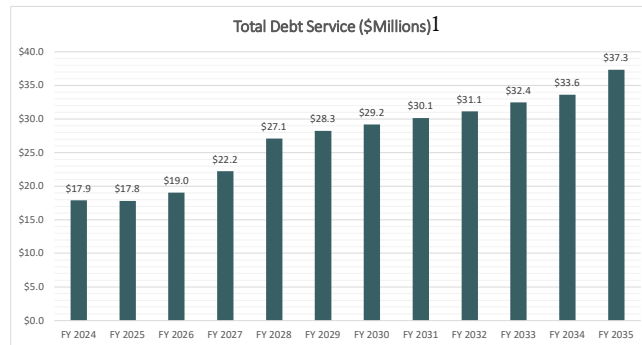
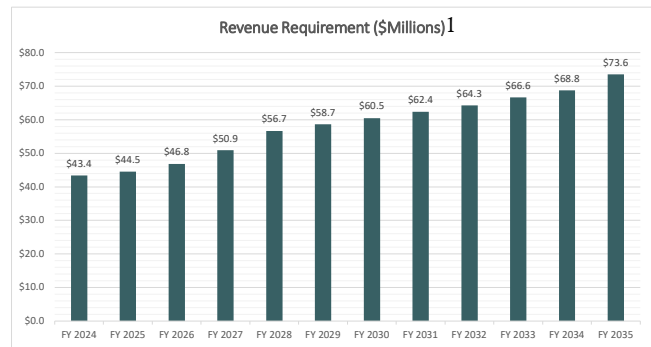
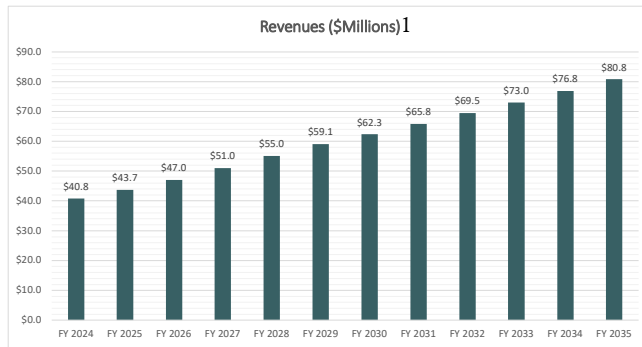
### TOTAL CUMULATIVE CCRC - CITY SHARE

		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Existing CCRC	From existing CCRC worksheet	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170	\$ 872,170
NEW CCRC	From calculations above	\$ -	\$ 205,751	\$ 1,175,557	\$ 2,323,457	\$ 2,727,668	\$ 3,062,823	\$ 3,522,468	\$ 3,994,005	\$ 4,545,677	\$ 5,252,247	\$ 6,050,363
<b>TOTAL CCRC - CITY SHARE ONLY</b>		<b>\$ 872,170</b>	<b>\$ 1,077,921</b>	<b>\$ 2,047,727</b>	<b>\$ 3,195,627</b>	<b>\$ 3,599,838</b>	<b>\$ 3,934,993</b>	<b>\$ 4,394,638</b>	<b>\$ 4,866,175</b>	<b>\$ 5,417,847</b>	<b>\$ 6,124,417</b>	<b>\$ 6,922,533</b>

\* The City I&I Source Reduction Program includes a small portion of work planned for City-owned shared interceptors, with these costs allocated to all signatories based on flow. The calculation of the City-only portion of this program cost is included in the figures shown in the Projects section of this worksheet.

## Lehigh County Authority - Allentown Division: Wastewater Capital Plan Projects (2025-2029)

<u>Project #</u>	<u>Project</u>	<u>CCRC Eligible?</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
AD-S-A	Annual Projects	No	\$ 2,715,000	\$ 2,065,000	\$ 2,035,000	\$ 2,165,000	\$ 1,975,000
AD-S-10	Indenture Report Improvements	No	\$ 250,000	\$ 200,000	\$ 150,000	\$ 150,000	\$ 150,000
AD-S-13	WWTP Redundant Power Supply	No	\$ -	\$ 50,000	\$ 850,000	\$ 100,000	\$ -
AD-S-14	WWTP Facilities Improvements	No	\$ 100,000	\$ 700,000	\$ -	\$ -	\$ -
AD-S-12	Manhole Inspection and Sealing Program	No	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
AD-S-11	WWTP Master Plan	No	\$ -				\$ 250,000
AD-S-40	Act 537 Alternative Analyses	No	\$ 250,000	\$ 100,000	\$ -	\$ -	\$ -
AD-S-41	Miscellaneous Act 537 Planning, Financial and Legal Reviews	No	\$ 200,000	\$ 100,000			
AD-S-23	WWTP Wet Weather Improvements Project - Phase 1	Yes - Master Plan	\$ 750,000	\$ 10,900,000	\$ 15,750,000	\$ -	\$ -
AD-S-25	Source Reduction Plan - I/I Reduction Program	Yes - 537	\$ 3,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,250,000	\$ 5,250,000
AD-S-20	WWTP Electrical Substation Replacement Phase 2	Yes - CCRC ALREADY IN PLACE	\$ 5,250,000	\$ 750,000	\$ -	\$ -	\$ -
AD-S-21	WWTP Final Clarifier 1-4 Rehabilitation	Yes - CCRC ALREADY IN PLACE	\$ 2,500,000	\$ 3,000,000	\$ -	\$ -	\$ -
AD-S-22	WWTP Primary Sludge Digester Feed Line Replacement	Yes - CCRC ALREADY IN PLACE	\$ 2,700,000	\$ -	\$ -	\$ -	\$ -
AD-S-24	WWTP Plastic Media Trickling Filter Rehabilitation Project	Yes - NEW CCRC	\$ 200,000	\$ 5,200,000	\$ -	\$ -	\$ -
AD-S-26	WWTP Solids Process Improvements	Yes - NEW CCRC	\$ 500,000	\$ 2,500,000	\$ 7,000,000	\$ 2,000,000	\$ -
<b>CITY WW TOTAL CAPEX</b>			<b>\$ 19,415,000</b>	<b>\$ 31,565,000</b>	<b>\$ 31,785,000</b>	<b>\$ 10,665,000</b>	<b>\$ 8,625,000</b>



<sup>1</sup> Combined water and wastewater financials due to unavailable data on separated debt service. LCAs City Fund financials are combined across the two services.

January 27, 2025

Mr. Robert Ibach, Jr.  
Township Manager  
Upper Macungie Township  
8330 Schantz Rd.  
Breinigsville, PA, 18031

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Ibach:

Raftelis is pleased to provide this summary report for Upper Macungie Township as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Upper Macungie Township:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (Upper Macungie has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 100% PAYGO financing. (Upper Macungie has scheduled I&I work of between \$500,000-2,000,000 per year through 2040).
- A cash reserve requirement of 180 days of operating expenses.
- No rate increases were projected throughout the forecast due to the expected decrease in annual payments to LCA because of the new flow-based allocation.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Township’s staff for the support provided during this project.

Sincerely,

**Zachary Green**  
*Project Manager*

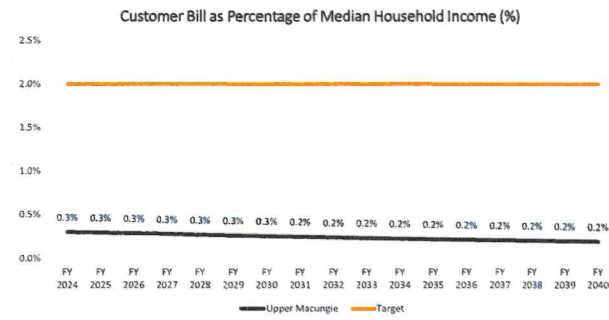
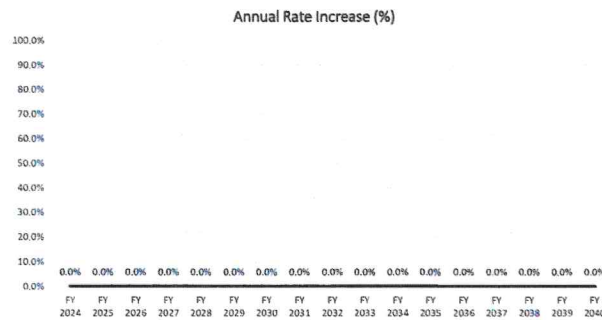
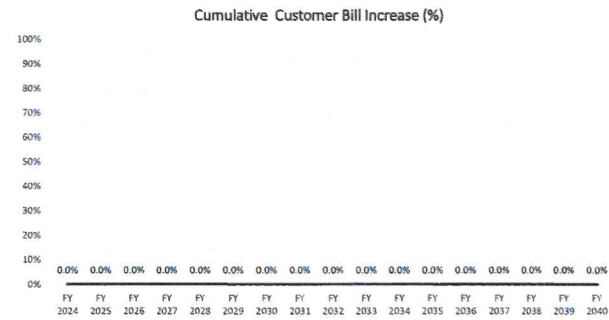
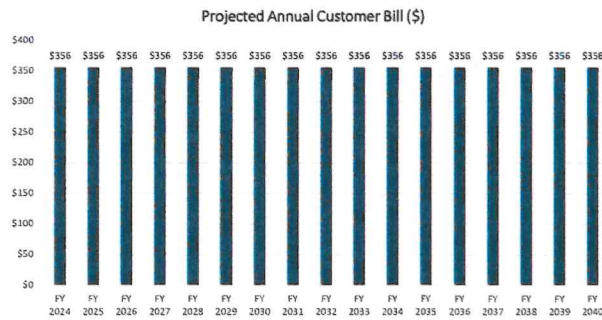
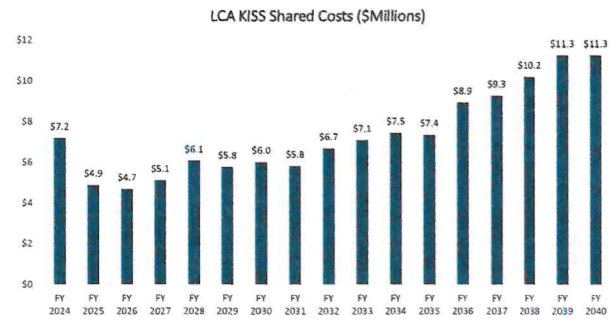
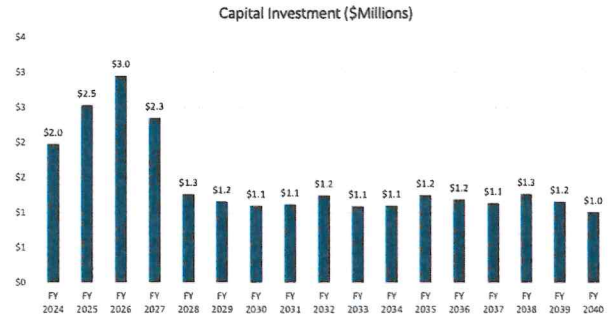
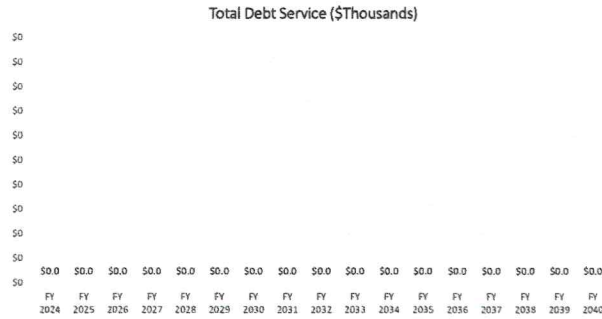
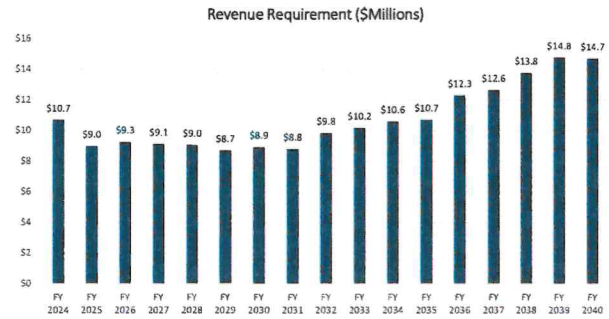
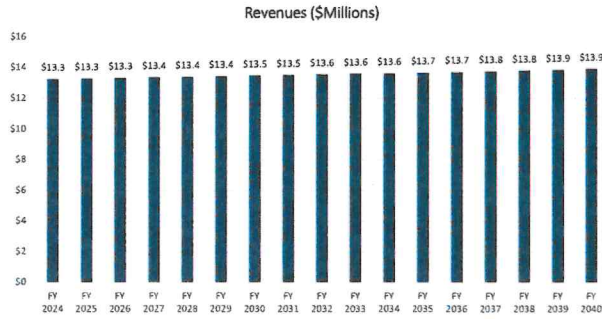


## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Upper Macungie Cash Flow Projection		Actuals	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																			
Net Beginning Balance		23,882,657	14,203,463	16,784,766	21,110,344	25,187,981	29,443,541	33,803,009	38,555,814	43,115,944	47,839,813	51,559,095	55,006,481	58,070,658	61,066,195	62,513,370	63,664,326	63,739,325	62,855,014
Revenues:																			
Rate Revenue		9,812,126	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000	11,350,000
Rate Revenue (From Adjustment)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers In		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		748,600	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100	814,100
Non-Operating Revenues (includes interest)		1,279,165	1,101,241	1,134,278	1,168,307	1,203,356	1,239,456	1,276,640	1,314,939	1,354,388	1,395,019	1,436,870	1,479,976	1,524,375	1,570,106	1,617,210	1,665,726	1,715,698	1,767,169
Grants per CIP		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue		11,839,891	13,265,341	13,298,378	13,332,407	13,367,456	13,403,556	13,440,740	13,479,039	13,518,488	13,559,119	13,600,970	13,644,076	13,688,475	13,734,206	13,781,310	13,829,826	13,879,798	13,931,269
Operating Expenses:																			
Operating Expenses		(1,217,025)	(1,511,193)	(1,556,529)	(1,603,225)	(1,651,321)	(1,700,861)	(1,751,887)	(1,804,443)	(1,858,577)	(1,914,334)	(1,971,764)	(2,030,917)	(2,091,845)	(2,154,600)	(2,219,238)	(2,285,815)	(2,354,389)	(2,425,021)
Depreciation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Expense		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital		(807,513)	(1,976,845)	(2,531,800)	(2,951,799)	(2,349,000)	(1,259,000)	(1,154,000)	(1,099,000)	(1,115,000)	(1,243,000)	(1,092,000)	(1,098,000)	(1,247,000)	(1,184,000)	(1,135,000)	(1,265,000)	(1,154,000)	(1,004,000)
Other (KISS Payments to LCA)		(6,852,000)	(7,196,000)	(4,884,472)	(4,699,746)	(5,111,574)	(6,084,228)	(5,782,048)	(6,015,466)	(5,821,042)	(6,682,503)	(7,089,819)	(7,450,981)	(7,354,094)	(8,948,432)	(9,276,116)	(10,204,012)	(11,255,719)	(11,262,802)
Total Operating Expenses		(8,876,538)	(10,684,038)	(8,972,801)	(9,254,770)	(9,111,895)	(9,044,089)	(8,687,935)	(8,918,909)	(8,794,618)	(9,839,837)	(10,153,584)	(10,579,898)	(10,692,938)	(12,287,031)	(12,630,354)	(13,754,827)	(14,764,109)	(14,691,823)
Debt Service:																			
Existing Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coverage:																			
Additional Revenue Needed from Rate Increase (Senior Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																			
Additional Rate Revenue for Minimum Operating Reserve Target		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance		24,268,317	16,784,766	21,110,344	25,187,981	29,443,541	33,803,009	38,555,814	43,115,944	47,839,813	51,559,095	55,006,481	58,070,658	61,066,195	62,513,370	63,664,326	63,739,325	62,855,014	62,094,459
Required Rate Increase:																			
Calculated % Rate Increase		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Additional Revenue from Rate Increase		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIP:																			
Operating Cash Funded Capital - Baseline		(807,513)	(1,976,845)	(596,800)	(1,536,799)	(1,434,000)	(334,000)	(354,000)	(299,000)	(315,000)	(443,000)	(392,000)	(398,000)	(547,000)	(524,000)	(575,000)	(630,000)	(594,000)	(444,000)
SRP I&I Capital		-	-	(1,935,000)	(1,415,000)	(915,000)	(925,000)	(800,000)	(800,000)	(800,000)	(800,000)	(700,000)	(700,000)	(700,000)	(660,000)	(560,000)	(635,000)	(560,000)	(560,000)
Cash-funded		-	-	(1,935,000)	(1,415,000)	(915,000)	(925,000)	(800,000)	(800,000)	(800,000)	(800,000)	(700,000)	(700,000)	(700,000)	(660,000)	(560,000)	(635,000)	(560,000)	(560,000)
Debt-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																			
Residential Bill @ \$ CCF per month		\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00	\$ 356.00
MHI Burden		0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





January 24, 2025

Mr. Bruce Beitel  
Township Manager  
Lower Macungie Township  
3400 Brookside Road  
Lower Macungie Township, PA 18062

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Beitel:

Raftelis is pleased to provide this summary report for the Township of Lower Macungie as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Lower Macungie Township:

- A Debt Service Coverage Requirement for Senior Lien Debt Service of 120% and a Debt Service Coverage Requirement for Subordinate Lien Debt Service of 110%. (Lower Macungie Township has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing.
- A cash reserve requirement of 90 days of operating expenses.
- Projected rate increases were based on the Township’s current plans as relayed during a meeting.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Township’s staff for the support provided during this project.

Sincerely,

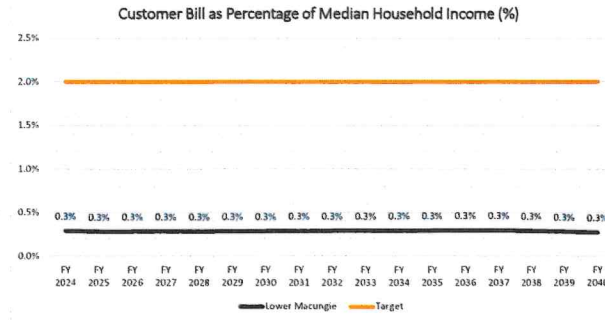
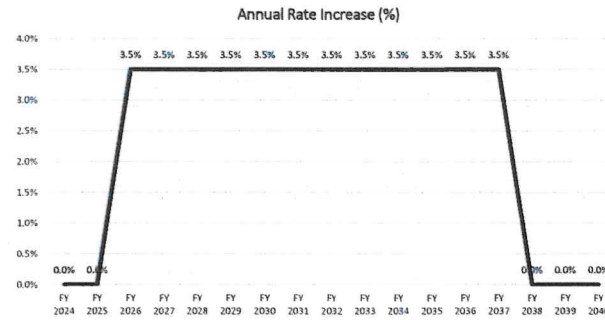
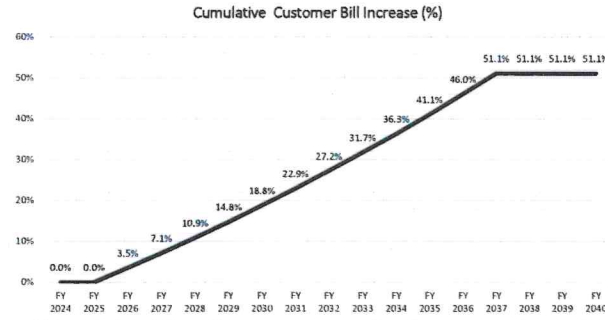
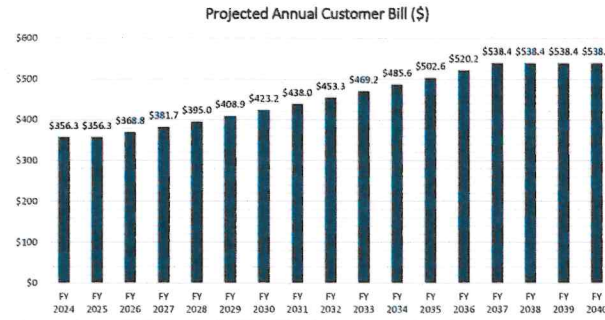
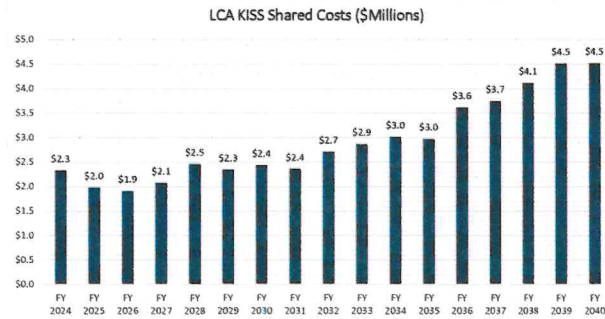
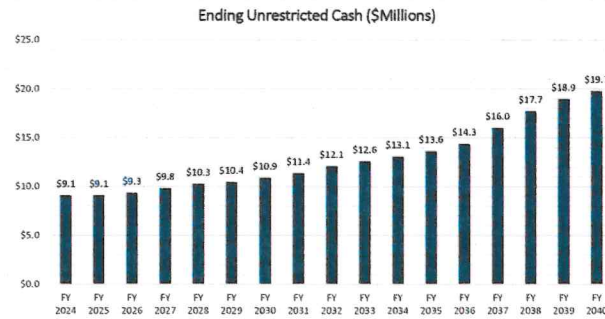
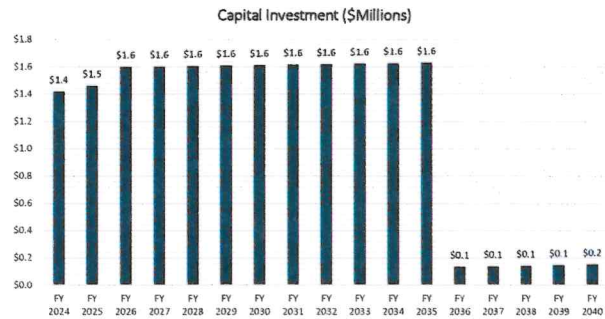
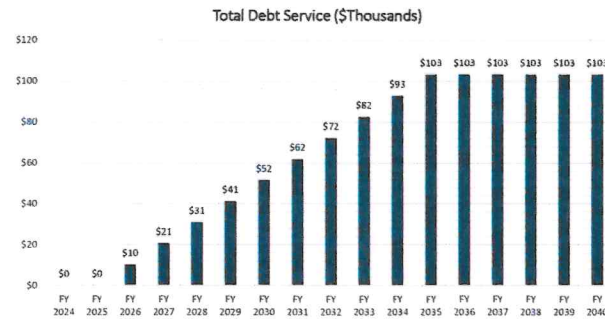
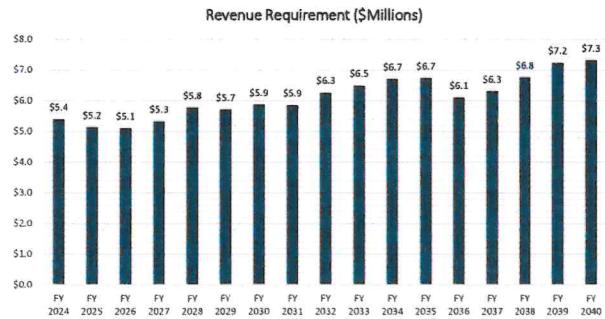
**Zachary Green**  
*Project Manager*

## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Lower Macungie Cash Flow Projections		Actual	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																			
Net Beginning Balance		7,049,645	9,072,662	9,072,662	9,340,234	9,818,218	10,256,397	10,434,583	10,869,764	11,352,250	12,059,355	12,572,894	13,081,151	13,608,822	14,346,197	15,981,200	17,679,239	18,943,068	19,742,733
Revenues:																			
Rate Revenue		4,916,893	4,980,000	4,980,000	4,980,000	5,154,300	5,334,701	5,521,415	5,714,665	5,914,678	6,121,692	6,335,951	6,557,709	6,787,229	7,024,782	7,270,649	7,525,122	7,525,122	7,525,122
Rate Revenue (From Adjustment)					-	174,300	180,401	186,715	193,250	200,013	207,014	214,259	221,758	229,520	237,553	245,867	254,473	-	-
Transfers In					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		215,313	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600	77,600
Non-Operating Revenues (includes interest)		420,662	350,000	360,500	371,315	382,454	393,928	405,746	417,918	430,456	443,370	456,671	470,371	484,482	499,016	513,987	529,406	545,289	561,647
Grants per CIP					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue		5,552,868	5,407,600	5,418,100	5,603,215	5,794,755	5,992,943	6,198,010	6,410,196	6,629,747	6,856,920	7,091,980	7,335,200	7,586,864	7,847,266	8,116,709	8,132,128	8,148,011	8,164,369
Operating Expenses:																			
Operating Expenses		(1,504,977)	(1,655,600)	(1,705,268)	(1,756,426)	(1,809,119)	(1,863,392)	(1,919,294)	(1,976,873)	(2,036,179)	(2,097,265)	(2,160,182)	(2,224,988)	(2,291,738)	(2,360,490)	(2,431,304)	(2,504,244)	(2,579,371)	(2,656,752)
Non-Operating Expense					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital		(1,143,042)	(1,420,000)	(1,462,600)	(1,450,000)	(1,453,000)	(1,456,090)	(1,459,273)	(1,462,551)	(1,465,927)	(1,469,405)	(1,472,987)	(1,476,677)	(1,480,477)	(134,392)	(138,423)	(142,576)	(146,853)	(151,259)
Other (KISS Payments to LCA)		(2,229,309)	(2,332,000)	(1,982,660)	(1,908,495)	(2,073,839)	(2,464,347)	(2,343,026)	(2,436,740)	(2,358,681)	(2,704,547)	(2,868,080)	(3,013,081)	(2,974,182)	(3,614,289)	(3,745,850)	(4,118,388)	(4,519,029)	(4,521,873)
Total Operating Expenses		(4,877,328)	(5,407,600)	(5,150,528)	(5,114,921)	(5,335,958)	(5,783,830)	(5,721,593)	(5,876,164)	(5,860,788)	(6,271,217)	(6,501,249)	(6,714,746)	(6,746,397)	(6,109,170)	(6,315,578)	(6,765,208)	(7,245,253)	(7,329,884)
Debt Service:																			
Existing Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 year term, 1.0% issuance cost, 5.4% rate)		-	-	-	(10,309)	(20,618)	(30,927)	(41,237)	(51,546)	(61,855)	(72,164)	(82,473)	(92,782)	(103,092)	(103,092)	(103,092)	(103,092)	(103,092)	(103,092)
Total Debt Service		-	-	-	(10,309)	(20,618)	(30,927)	(41,237)	(51,546)	(61,855)	(72,164)	(82,473)	(92,782)	(103,092)	(103,092)	(103,092)	(103,092)	(103,092)	(103,092)
Coverage:																			
Additional Revenue Needed from Rate Increase (Senior Lien Debt Service)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Sub. Lien Debt Service)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																			
Additional Rate Revenue for Minimum Operating Reserve Target		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance		7,049,645	9,072,662	9,340,234	9,818,218	10,256,397	10,434,583	10,869,764	11,352,250	12,059,355	12,572,894	13,081,151	13,608,822	14,346,197	15,981,200	17,679,239	18,943,068	19,742,733	20,474,127
Required Rate Increase:																			
Calculated % Rate Increase		0.0%	0.0%	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	0.0%	0.0%	0.0%
CIP:																			
Operating Cash Funded Capital		-	(1,420,000)	(1,462,600)	(100,000)	(103,000)	(106,090)	(109,273)	(112,551)	(115,927)	(119,405)	(122,987)	(126,677)	(130,477)	(134,392)	(138,423)	(142,576)	(146,853)	(151,259)
SRP I&I Capital		-	-	-	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	-	-	-	-
Cash-funded		-	-	-	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	(1,350,000)	-	-	-
Debt-funded		-	-	-	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	-	-	-	-
Grant Funded Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																			
Residential Bill @ 5 ccf per month		\$ 356.30	\$ 356.30	\$ 356.30	\$ 368.77	\$ 381.68	\$ 395.04	\$ 408.86	\$ 423.17	\$ 437.99	\$ 453.31	\$ 469.18	\$ 485.60	\$ 502.60	\$ 520.19	\$ 538.40	\$ 538.40	\$ 538.40	\$ 538.40
MHI Burden		0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Mr. John Brown  
Borough Manager  
Borough of Macungie  
21 Locust Street  
Macungie, PA 18062

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Brown:

Raftelis is pleased to provide this summary report for the Borough of Macungie as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Macungie:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (Macungie has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing. (Macungie currently has no I&I capital spending planned).
- A cash reserve requirement of 90 days of operating expenses.
- No rate increases were projected during the forecast period due to the recent rate increases adopted by the Borough.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Borough’s staff for the support provided during this project.

Sincerely,

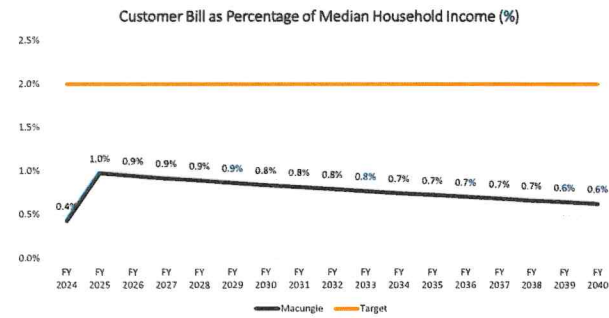
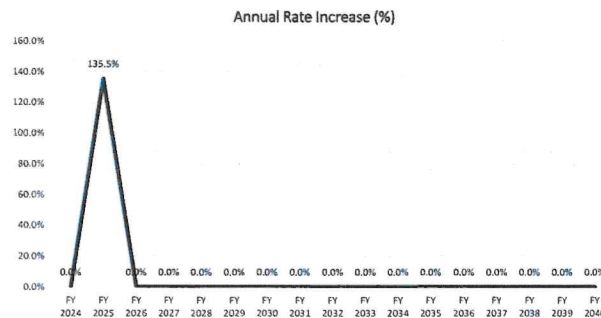
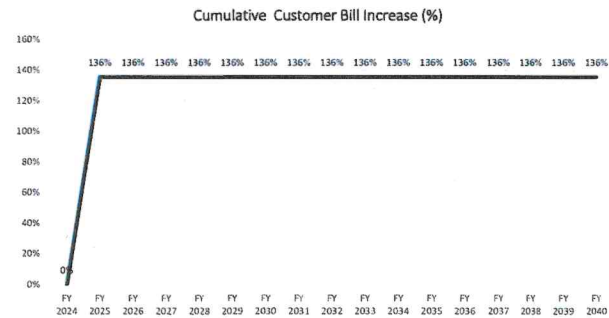
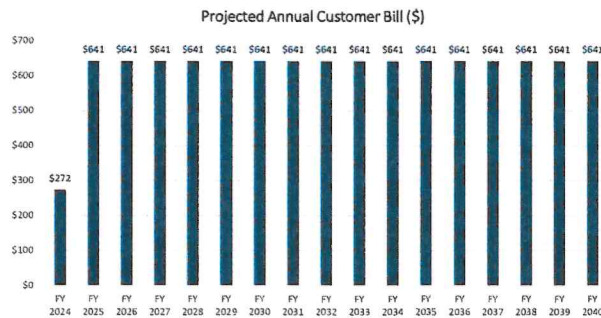
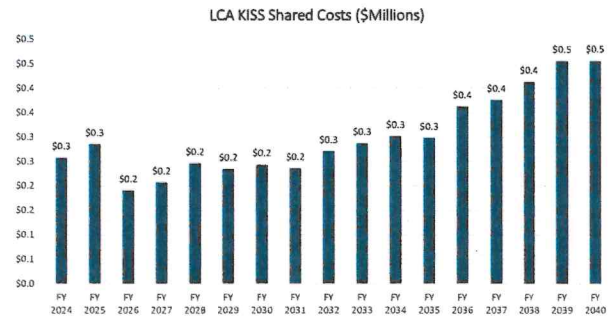
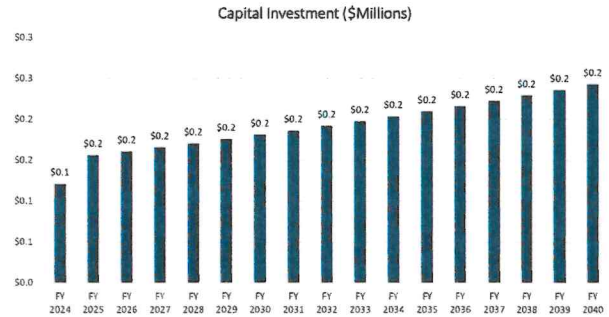
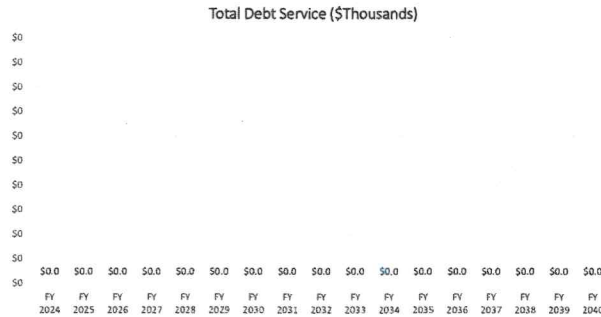
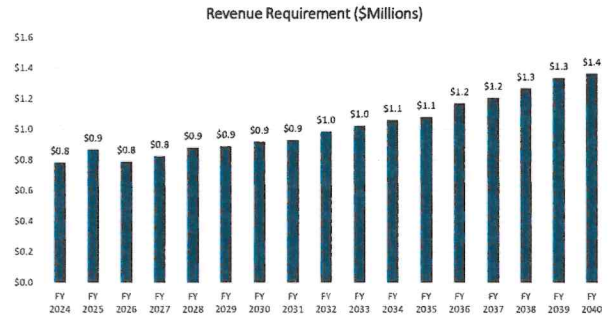
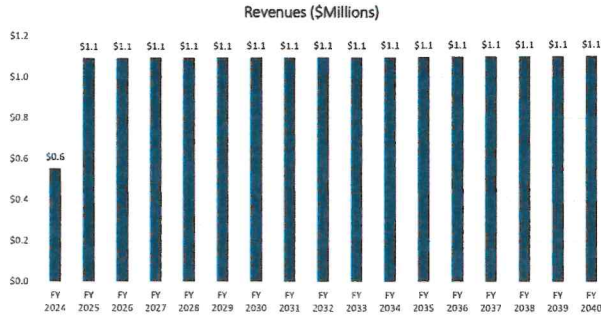
**Zachary Green**  
*Project Manager*

## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Macungie Cashflow Projection	Actuals	Budget	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																		
Net Beginning Balance	328,784	-	-	223,778	525,718	793,671	1,004,392	1,209,008	1,385,263	1,549,929	1,659,633	1,732,176	1,768,810	1,787,458	1,718,928	1,613,872	1,447,271	1,213,389
Revenues:																		
Rate Revenue	544,867	456,957	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200	987,200
Rate Revenue (From Adjustment)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	14,411	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774	81,774
Non-Operating Revenues (includes interest)	24,425	14,845	23,434	24,137	24,861	25,607	26,375	27,166	27,981	28,821	29,685	30,576	31,493	32,438	33,411	34,414	35,446	36,509
Grants per CIP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	583,703	553,576	1,092,408	1,093,111	1,093,835	1,094,581	1,095,349	1,096,140	1,096,955	1,097,795	1,098,659	1,099,550	1,100,467	1,101,412	1,102,385	1,103,388	1,104,420	1,105,483
Operating Expenses:																		
Operating Expenses	(491,553)	(406,198)	(404,132)	(416,256)	(428,744)	(441,606)	(454,854)	(468,500)	(482,555)	(497,031)	(511,942)	(527,301)	(543,120)	(559,413)	(576,196)	(593,481)	(611,286)	(629,624)
Non-Operating Expense	(8,921)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment	-	-	(23,018)	(23,709)	(24,420)	(25,152)	(25,907)	(26,684)	(27,485)	(28,309)	(29,159)	(30,033)	(30,934)	(31,862)	(32,818)	(33,803)	(34,817)	(35,861)
Transfer Out - Cash & Grant Funded Capital	-	(121,072)	(156,072)	(160,754)	(165,577)	(170,544)	(175,660)	(180,930)	(186,358)	(191,949)	(197,707)	(203,639)	(209,748)	(216,040)	(222,521)	(229,197)	(236,073)	(243,155)
Other (KISS Payments to LCA)	(222,029)	(258,076)	(285,408)	(190,453)	(207,142)	(246,557)	(234,312)	(243,771)	(235,892)	(270,802)	(287,308)	(301,944)	(298,018)	(362,626)	(375,906)	(413,508)	(456,127)	(456,414)
Tot: Total Operating Expenses LESS Depreciation	(722,503)	(785,346)	(868,630)	(791,171)	(825,882)	(883,860)	(890,733)	(919,885)	(932,290)	(988,091)	(1,026,116)	(1,062,916)	(1,081,819)	(1,169,942)	(1,207,441)	(1,269,989)	(1,338,303)	(1,365,055)
Debt Service:																		
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coverage:																		
Additional Revenue Needed from Rate Increase (Senior Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																		
Additional Rate Revenue for Minimum Operating Reserve Target	-	397,839	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	189,984	(231,770)	223,778	525,718	793,671	1,004,392	1,209,008	1,385,263	1,549,929	1,659,633	1,732,176	1,768,810	1,787,458	1,718,928	1,613,872	1,447,271	1,213,389	953,817
Required Rate Increase:																		
Calculated % Rate Increase	0%	0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Additional Revenue from Rate Increase	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIP:																		
Operating Cash Funded Capital	-	(121,072)	(156,072)	(160,754)	(165,577)	(170,544)	(175,660)	(180,930)	(186,358)	(191,949)	(197,707)	(203,639)	(209,748)	(216,040)	(222,521)	(229,197)	(236,073)	(243,155)
SRP I&I Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash-funded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt-funded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																		
Residential Bill @ 5 CCF per month	\$ 272.21	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11	\$ 641.11
MHI Burden	0.4%	1.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.6%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Mr. Steve Nemeth  
Borough Manager  
Borough of Alburtis  
260 Franklin St.  
Alburtis, PA 18011

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Nemeth:

Raftelis is pleased to provide this summary report for the Borough of Alburtis as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for the Borough of Alburtis:

- A Debt Service Coverage Requirement of 120% for Senior Lien Debt Service and a Debt Service Coverage Requirement of 110% for Subordinate Lien Debt Service. (Alburtis has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing. (Alburtis has completed significant I&I projects in recent years and has no major projects scheduled currently).
- A cash reserve requirement of 90 days of operating expenses.
- Projected rate increases were smoothed to avoid drastic increases in any particular year.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Borough’s staff for the support provided during this project.

Sincerely,

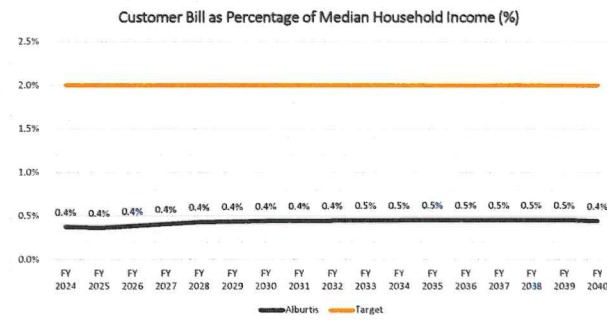
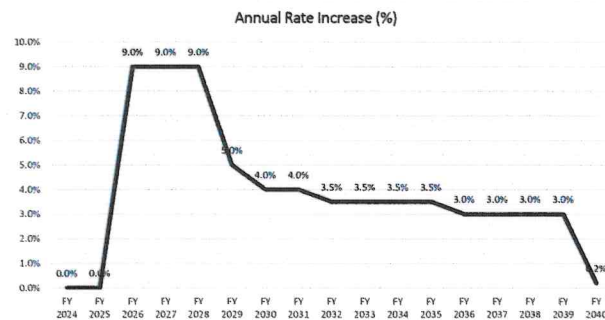
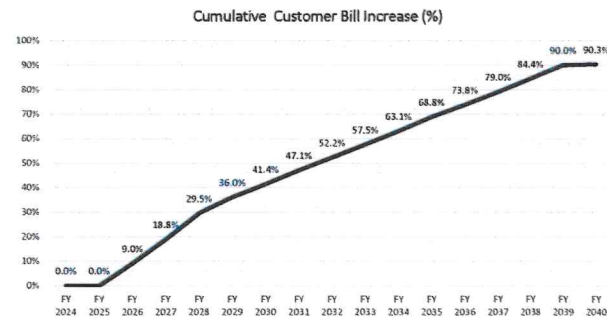
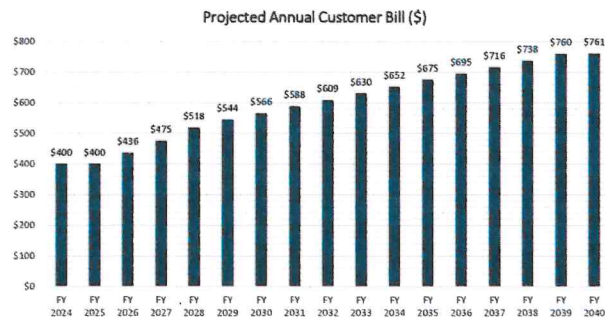
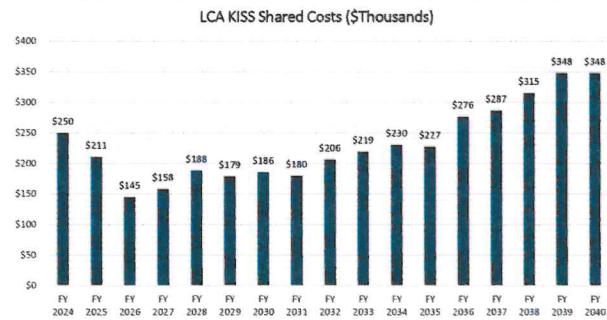
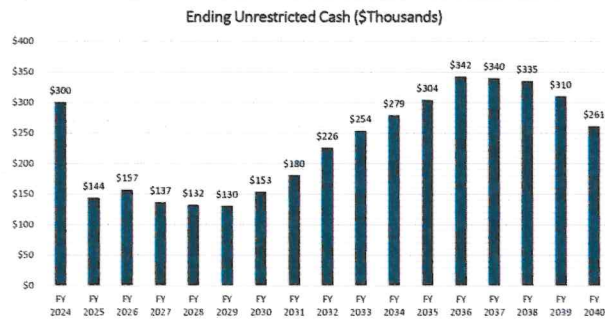
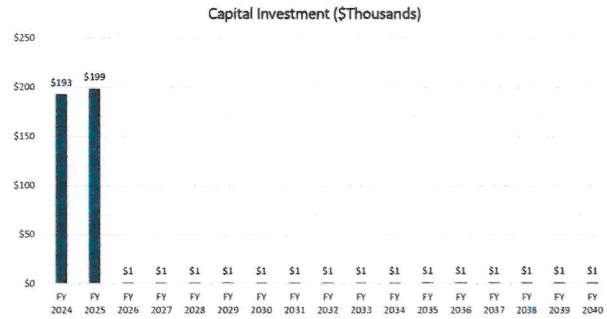
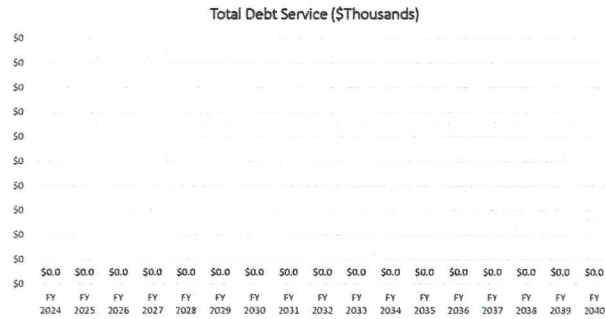
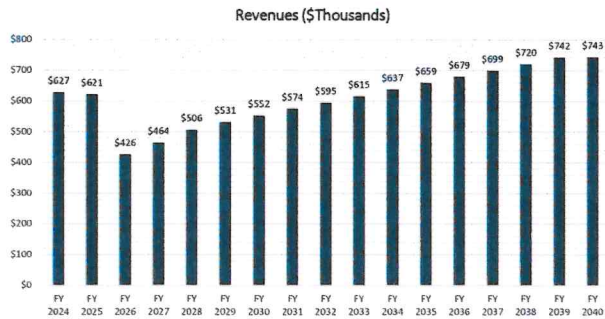
**Zachary Green**  
*Project Manager*



## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Alburtis Cash Flow Projection		Actuals	Budget	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected																	
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040																
Fund Balance:																																			
Net Beginning Balance		293,332	300,392	143,656	157,355	136,533	132,217	130,254	153,298	180,476	225,556	253,629	279,115	303,842	342,379	339,627	334,954	310,064	261,386																
Revenues:																																			
Rate Revenue		397,518	434,116	390,000	390,000	425,100	463,359	505,061	530,314	551,527	573,588	593,664	614,442	635,947	658,205	677,952	698,290	719,239	740,816																
Rate Revenue (From Adjustment)		-	-	-	35,100	38,259	41,702	25,253	21,213	22,061	20,076	20,778	21,505	22,258	19,746	20,339	20,949	21,577	1,441																
Transfers In		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Non-Rate Revenues		-	-	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300																
Non-Operating Revenues (includes interest)		-	1,305	500	515	530	546	563	580	597	615	633	652	672	692	713	734	756	779																
Grants per CIP		699,485	192,000	230,658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Total Revenue		1,097,003	627,421	621,458	425,915	464,189	505,908	531,177	552,407	574,485	594,579	615,375	636,900	659,177	678,944	699,303	720,273	741,872	743,336																
Operating Expenses:																																			
Operating Expenses		(499,130)	(259,629)	(286,514)	(295,109)	(303,963)	(313,082)	(322,474)	(332,148)	(342,113)	(352,376)	(362,947)	(373,836)	(385,051)	(396,602)	(408,500)	(420,755)	(433,378)	(446,379)																
Depreciation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Non-Operating Expense		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Minor Capital & Equipment		-	(4,134)	(5,365)	(5,526)	(5,692)	(5,862)	(6,038)	(6,220)	(6,406)	(6,598)	(6,796)	(7,000)	(7,210)	(7,426)	(7,649)	(7,879)	(8,115)	(8,358)																
Transfer Out - Cash & Grant Funded Capital		-	(192,864)	(105,000)	(917)	(945)	(973)	(1,002)	(1,032)	(1,063)	(1,095)	(1,128)	(1,162)	(1,197)	(1,233)	(1,270)	(1,308)	(1,347)	(1,387)																
Other (KISS Payments to LCA)		(170,000)	(249,983)	(210,880)	(145,184)	(157,906)	(187,954)	(178,619)	(185,829)	(179,823)	(206,435)	(219,018)	(230,175)	(227,182)	(276,434)	(286,557)	(315,222)	(347,711)	(347,930)																
Total Operating Expenses		(669,130)	(706,610)	(607,759)	(446,737)	(468,505)	(507,871)	(508,133)	(525,229)	(529,405)	(566,505)	(589,890)	(612,173)	(620,640)	(681,696)	(703,976)	(745,163)	(790,551)	(804,055)																
Debt Service:																																			
Existing Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Total Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Coverage:																																			
Additional Revenue Needed from Rate Increase (Senior Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Additional Revenue Needed from Rate Increase (Subordinate Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Cash Calculations:																																			
Additional Rate Revenue for Minimum Operating Reserve Target		-	-	-	10,022	22,932	38,172	-	-	-	-	-	-	-	-	-	-	-	1,441																
Ending Cash Balance		721,205	221,203	157,355	136,533	132,217	130,254	153,298	180,476	225,556	253,629	279,115	303,842	342,379	339,627	334,954	310,064	261,386	200,667																
Required Rate Increase:																																			
Calculated % Rate Increase		0.0%	0.0%	0.0%	9.0%	9.0%	9.0%	5.0%	4.0%	4.0%	3.5%	3.5%	3.5%	3.5%	3.0%	3.0%	3.0%	3.0%	0.2%																
Additional Revenue from Rate Increase		-	-	-	35,100	38,259	41,702	25,253	21,213	22,061	20,076	20,778	21,505	22,258	19,746	20,339	20,949	21,577	1,441																
CIP:																																			
Operating Cash Funded Capital		-	(192,864)	(198,650)	(917)	(945)	(973)	(1,002)	(1,032)	(1,063)	(1,095)	(1,128)	(1,162)	(1,197)	(1,233)	(1,270)	(1,308)	(1,347)	(1,387)																
SRP I&I Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Cash-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Debt-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Grant Funded Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
Customer Bill:																																			
Residential Bill @ 5 CCF per month		\$	400.00	\$	400.00	\$	436.00	\$	475.24	\$	518.01	\$	543.91	\$	565.67	\$	588.30	\$	608.89	\$	630.20	\$	652.25	\$	675.08	\$	695.33	\$	716.20	\$	737.68	\$	759.81	\$	761.29
MHI Burden			0.4%		0.4%		0.4%		0.4%		0.4%		0.4%		0.4%		0.4%		0.5%		0.5%		0.5%		0.5%		0.5%		0.5%		0.5%		0.4%		

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.



February 5, 2025

Mr. Thomas Petrucci  
Township Manager  
South Whitehall Township  
444 Walbert Avenue  
Allentown, PA 18104

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Petrucci:

Raftelis is pleased to provide this summary report for South Whitehall Township as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for South Whitehall:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (South Whitehall has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 100% PAYGO financing. (South Whitehall has between \$325,000-350,000 of I&I capital planned annually for the duration of the forecast).
- A cash reserve requirement of 90 days of operating expenses.
- No rate increases were projected throughout the forecast due to the likelihood of decreased LCA charges under the new flow-based allocation process.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Township’s staff for the support provided during this project.

Sincerely,

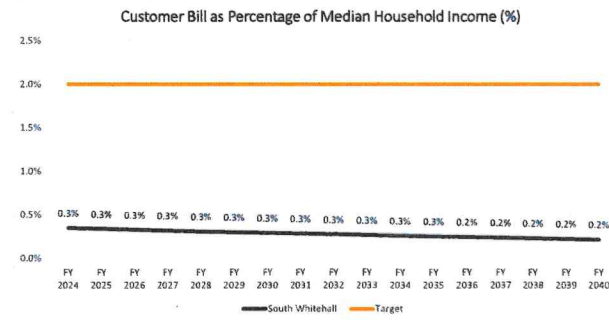
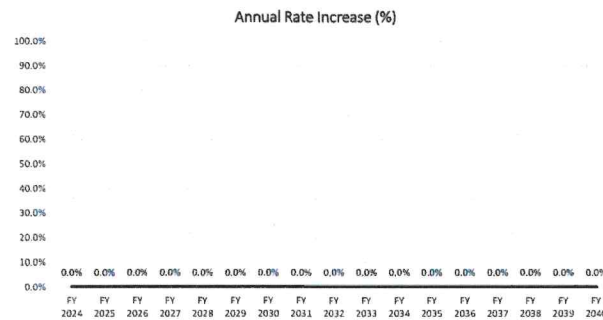
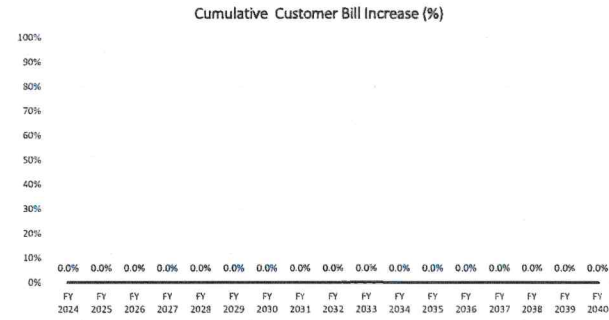
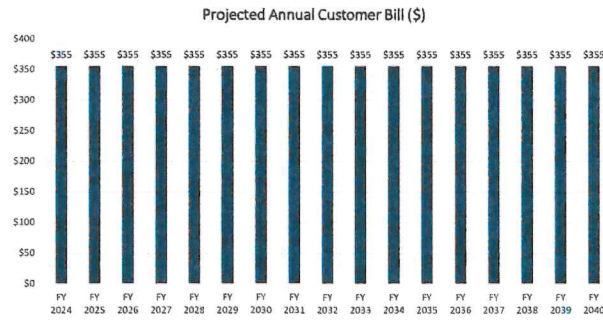
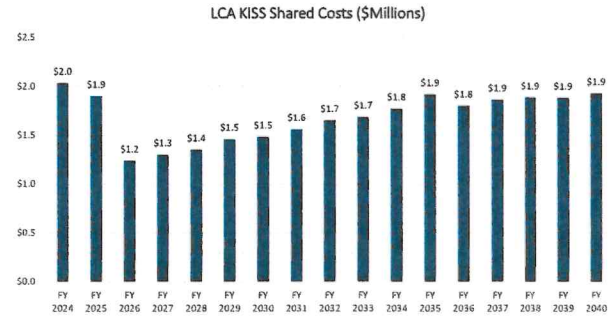
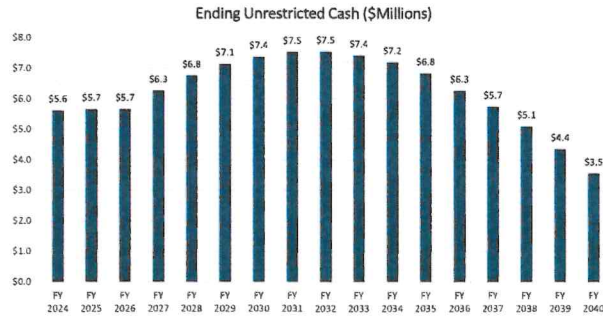
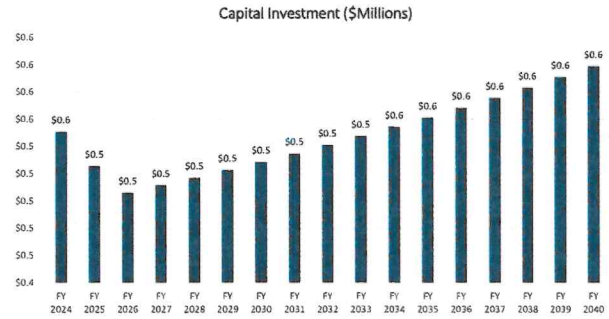
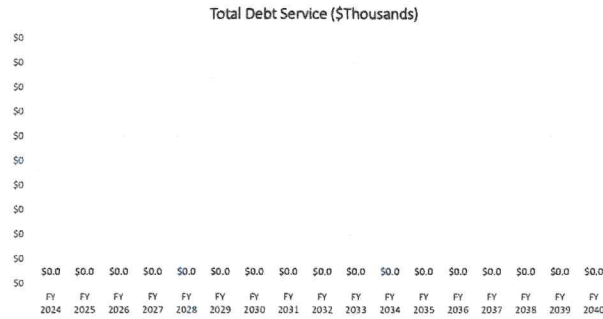
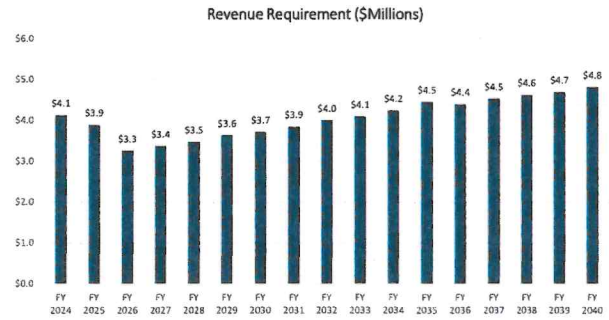
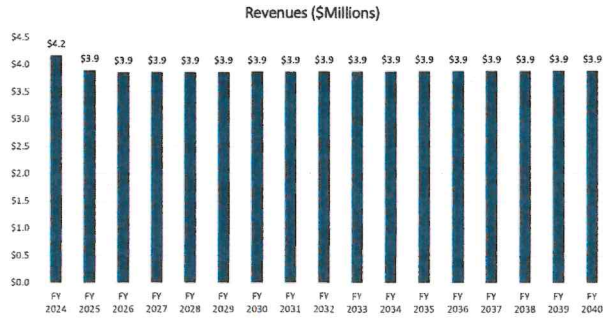
**Zachary Green**  
*Project Manager*



## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

South Whitehall Cashflow Projection	Actual	Budget	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Fund Balance:</b>																		
Net Beginning Balance	5,439,196	5,618,155	5,657,149	5,657,149	6,259,948	6,751,431	7,143,375	7,374,002	7,527,005	7,548,457	7,421,168	7,200,148	6,834,911	6,259,404	5,740,526	5,093,677	4,355,328	3,549,805
<b>Revenues:</b>																		
Rate Revenue	3,292,192	3,624,858	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244	3,596,244
Rate Revenue (From Adjustment)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers In	-	60,000	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	78,286	80,635	83,054	85,546	88,112	90,755	93,478
Non-Rate Revenues	548,107	457,400	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275	204,275
Non-Operating Revenues (includes interest)	165,921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants per CIP	369,645	27,000	35,395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Revenue</b>	<b>4,375,865</b>	<b>4,169,258</b>	<b>3,895,914</b>	<b>3,862,319</b>	<b>3,864,173</b>	<b>3,866,083</b>	<b>3,868,050</b>	<b>3,870,075</b>	<b>3,872,162</b>	<b>3,874,311</b>	<b>3,876,525</b>	<b>3,878,805</b>	<b>3,881,154</b>	<b>3,883,573</b>	<b>3,886,065</b>	<b>3,888,631</b>	<b>3,891,274</b>	<b>3,893,997</b>
<b>Operating Expenses:</b>																		
Operating Expenses	(1,223,905)	(1,543,064)	(1,470,080)	(1,514,182)	(1,559,607)	(1,606,396)	(1,654,588)	(1,704,225)	(1,755,352)	(1,808,013)	(1,862,253)	(1,918,120)	(1,975,664)	(2,034,934)	(2,095,982)	(2,158,861)	(2,223,627)	(2,290,336)
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Operating Expense	(61,114)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment	(10,132)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital	(836,271)	(551,000)	(525,834)	(506,109)	(511,543)	(517,139)	(522,903)	(528,840)	(534,955)	(541,254)	(547,742)	(554,424)	(561,307)	(568,396)	(575,698)	(583,219)	(590,965)	(598,944)
Other (KISS Payments to LCA)	(1,874,863)	(2,036,200)	(1,900,000)	(1,239,228)	(1,301,540)	(1,350,604)	(1,459,932)	(1,484,008)	(1,560,402)	(1,652,335)	(1,687,550)	(1,771,498)	(1,919,690)	(1,799,121)	(1,861,234)	(1,884,900)	(1,882,204)	(1,927,590)
<b>Total Operating Expenses</b>	<b>(4,006,285)</b>	<b>(4,130,264)</b>	<b>(3,895,914)</b>	<b>(3,259,519)</b>	<b>(3,372,690)</b>	<b>(3,474,138)</b>	<b>(3,637,422)</b>	<b>(3,717,073)</b>	<b>(3,850,709)</b>	<b>(4,001,601)</b>	<b>(4,097,544)</b>	<b>(4,244,043)</b>	<b>(4,456,661)</b>	<b>(4,402,451)</b>	<b>(4,532,913)</b>	<b>(4,626,980)</b>	<b>(4,696,797)</b>	<b>(4,816,870)</b>
<b>Debt Service:</b>																		
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Debt Service</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Coverage:</b>																		
Additional Revenue Needed from Rate Increase (Senior Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Calculations:</b>																		
Additional Rate Revenue for Minimum Operating Reserve Target	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance	5,808,776	5,657,149	5,657,149	6,259,948	6,751,431	7,143,375	7,374,002	7,527,005	7,548,457	7,421,168	7,200,148	6,834,911	6,259,404	5,740,526	5,093,677	4,355,328	3,549,805	2,626,932
<b>Required Rate Increase:</b>																		
Calculated % Rate Increase	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Additional Revenue from Rate Increase	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CIP:</b>																		
Operating Cash Funded Capital Baseline	(667,500)	(551,000)	(175,834)	(181,109)	(186,543)	(192,139)	(197,903)	(203,840)	(209,955)	(216,254)	(222,742)	(229,424)	(236,307)	(243,396)	(250,698)	(258,219)	(265,965)	(273,944)
SRP I&I Capital	-	-	(350,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)
Cash-funded	-	-	(350,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)	(325,000)
Debt-funded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Customer Bill:</b>																		
Residential Bill @ 5 CCF per month	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99	\$ 354.99
MHI Burden	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.



February 5, 2025

Mr. Matthew Harleman  
General Manager  
Coplay Whitehall Sewer Authority  
3213 MacArthur Rd  
Whitehall Township, PA 18052

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Harleman:

Raftelis is pleased to provide this summary report for the Coplay-Whitehall Sewer Authority (CWSA) as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for CWSA:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (CWSA has existing annual sewer debt payments of between \$590,000-750,000).
- Inflow & Infiltration related capital expenditures at 100% PAYGO financing. (CWSA has \$1,160,000 of planned I&I capital spending between FY 2026-2030).
- A cash reserve requirement of 90 days of operating expenses.
- Projected rate increases were smoothed to avoid rate spikes in any particular year and to maintain debt service coverage requirements.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Authority’s staff for the support provided during this project.

Sincerely,

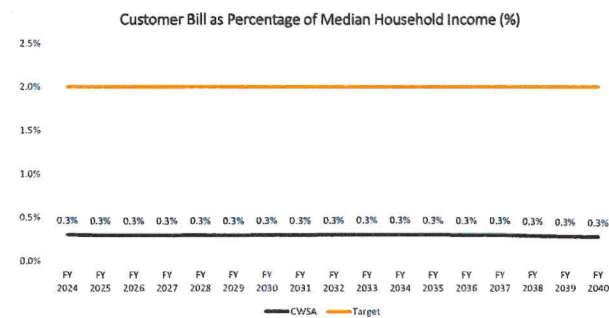
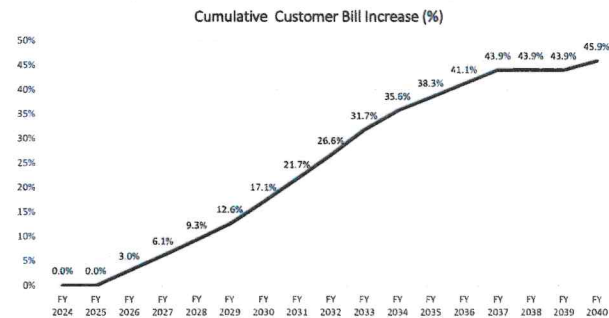
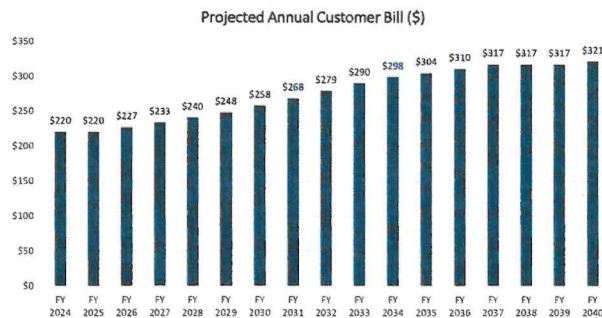
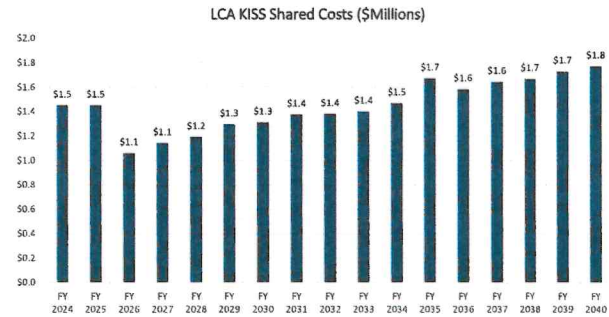
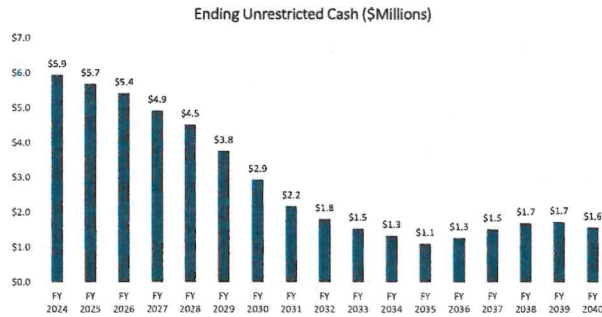
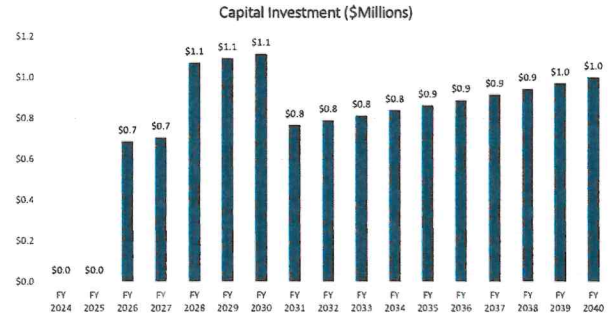
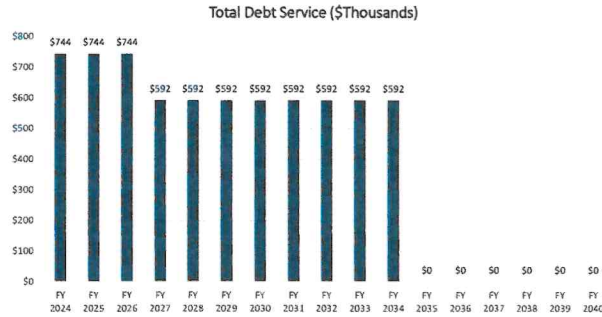
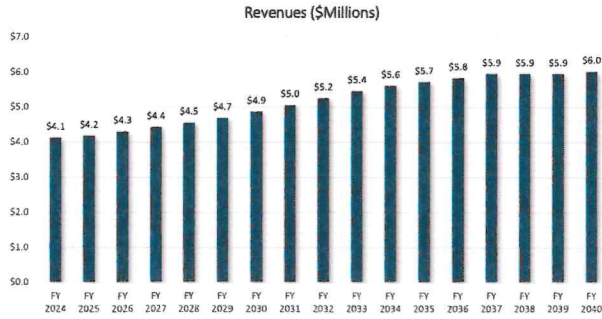
**Zachary Green**  
*Project Manager*



## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

CWSA Cashflow Projection	Actuals	Budget	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Fund Balance:</b>																		
Net Beginning Balance	5,950,914	5,933,970	5,683,970	5,421,220	4,917,118	4,515,661	3,757,995	2,932,464	2,174,011	1,808,824	1,529,322	1,327,519	1,105,599	1,268,231	1,513,315	1,692,205	1,724,906	1,569,310
<b>Revenues:</b>																		
Rate Revenue	4,012,708	3,939,300	4,012,300	4,012,300	4,132,669	4,256,649	4,384,349	4,515,879	4,696,514	4,884,375	5,079,750	5,282,940	5,441,428	5,550,256	5,661,262	5,774,487	5,774,487	5,774,487
Rate Revenue (From Adjustment)	-	-	-	120,369	123,980	127,699	131,530	180,635	187,861	195,375	203,190	158,488	108,829	111,005	113,225	-	-	78,159
Transfers In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	52,240	179,200	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000	165,000
Non-Operating Revenues (includes interest)	340,151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants per CIP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	4,405,099	4,118,500	4,177,300	4,297,669	4,421,649	4,549,349	4,680,879	4,861,514	5,049,375	5,244,750	5,447,940	5,606,428	5,715,256	5,826,262	5,939,487	5,939,487	5,939,487	6,017,646
<b>Operating Expenses:</b>																		
Operating Expenses	(1,793,021)	(2,174,250)	(2,245,800)	(2,313,174)	(2,382,569)	(2,454,046)	(2,527,668)	(2,603,498)	(2,681,603)	(2,762,051)	(2,844,912)	(2,930,260)	(3,018,167)	(3,108,712)	(3,201,974)	(3,298,033)	(3,396,574)	(3,498,883)
Non-Operating Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital	(641,975)	-	-	(686,234)	(706,071)	(1,071,503)	(1,092,549)	(1,114,225)	(766,552)	(789,548)	(813,235)	(837,632)	(862,761)	(888,644)	(915,303)	(942,762)	(971,045)	(1,000,176)
Other (KISS Payments to LCA)	(1,243,888)	(1,450,100)	(1,450,100)	(1,058,212)	(1,142,241)	(1,189,240)	(1,293,969)	(1,310,019)	(1,374,183)	(1,380,428)	(1,399,371)	(1,468,232)	(1,671,697)	(1,583,821)	(1,643,320)	(1,665,991)	(1,727,064)	(1,770,541)
Total Operating Expenses	(3,678,884)	(3,624,350)	(3,695,900)	(4,057,621)	(4,230,881)	(4,714,790)	(4,914,185)	(5,027,742)	(4,822,337)	(4,932,027)	(5,057,518)	(5,236,123)	(5,552,625)	(5,581,177)	(5,760,597)	(5,906,786)	(6,095,083)	(6,269,600)
<b>Debt Service:</b>																		
Existing Debt Service	(743,159)	(744,150)	(744,150)	(744,150)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,224)	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service	(743,159)	(744,150)	(744,150)	(744,150)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,225)	(592,224)	-	-	-	-	-
<b>Coverage:</b>																		
Additional Revenue Needed from Rate Increase (Senior Debt)	-	398,830	411,580	87,066	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Calculations:</b>																		
Additional Rate Revenue for Minimum Operating Reserve Target	-	-	-	-	-	-	-	-	-	-	-	-	152,512	13,064	-	-	-	78,159
Ending Cash Balance	5,933,970	5,683,970	5,421,220	4,917,118	4,515,661	3,757,995	2,932,464	2,174,011	1,808,824	1,529,322	1,327,519	1,105,599	1,268,231	1,513,315	1,692,205	1,724,906	1,569,310	1,317,356
<b>Required Rate Increase:</b>																		
Calculated % Rate Increase	0%	0%	0%	3.0%	3.0%	3.0%	3.0%	4.0%	4.0%	4.0%	4.0%	3.0%	2.0%	2.0%	2.0%	0.0%	0.0%	1.4%
Additional Revenue from Rate Increase	-	-	-	120,369	123,980	127,699	131,530	180,635	187,861	195,375	203,190	158,488	108,829	111,005	113,225	-	-	78,159
<b>CIP:</b>																		
Operating Cash Funded Capital	(641,975)	-	-	(661,234)	(681,071)	(701,503)	(722,549)	(744,225)	(766,552)	(789,548)	(813,235)	(837,632)	(862,761)	(888,644)	(915,303)	(942,762)	(971,045)	(1,000,176)
SRP I&I Capital	-	-	-	(25,000)	(25,000)	(370,000)	(370,000)	(370,000)	(370,000)	-	-	-	-	-	-	-	-	-
Cash Funded	-	-	-	(25,000)	(25,000)	(370,000)	(370,000)	(370,000)	(370,000)	-	-	-	-	-	-	-	-	-
Debt Funded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Customer Bill:</b>																		
Residential Bill @ 5 CCF per month	\$	220.00	\$	220.00	\$	226.60	\$	233.40	\$	240.40	\$	247.61	\$	257.52	\$	267.82	\$	278.53
MHI Burden		0.3%		0.3%		0.3%		0.3%		0.3%		0.3%		0.3%		0.3%		0.3%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Mr. Paul Ziegenfus  
Finance Director  
Salisbury Township  
2900 S. Pike Ave  
Allentown, PA 18103

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Ziegenfus:

Raftelis is pleased to provide this summary report for Salisbury Township as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Salisbury:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service.
- Inflow & Infiltration related capital expenditures at 100% PAYGO financing. (Salisbury has between \$350,000-400,000 of I&I capital planned annually for the duration of the forecast).
- A cash reserve requirement of 120 days of operating expenses.
- Rate increases were smoothed throughout the forecast to avoid sudden increases in any given year.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Township’s staff for the support provided during this project.

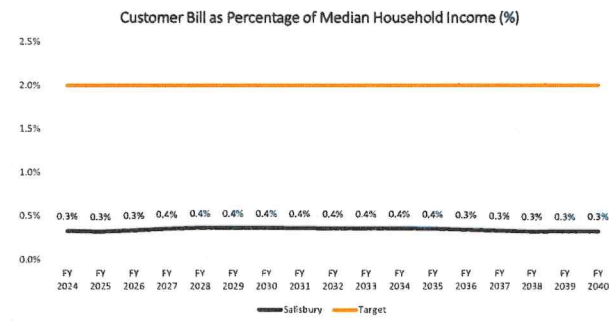
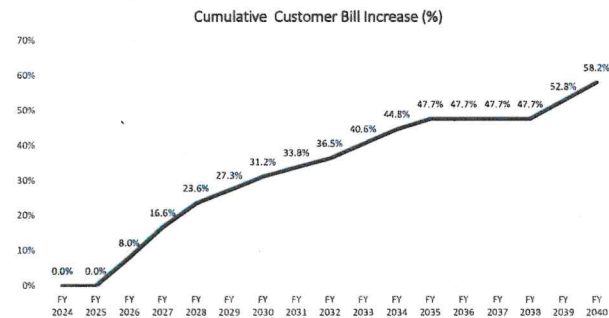
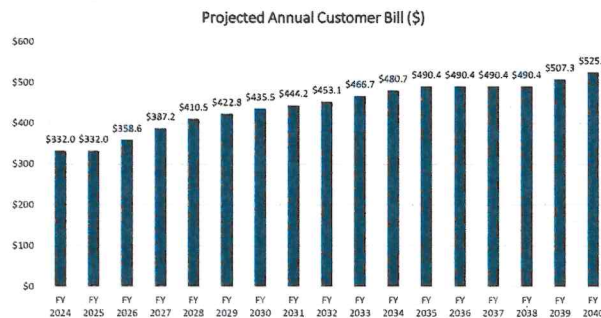
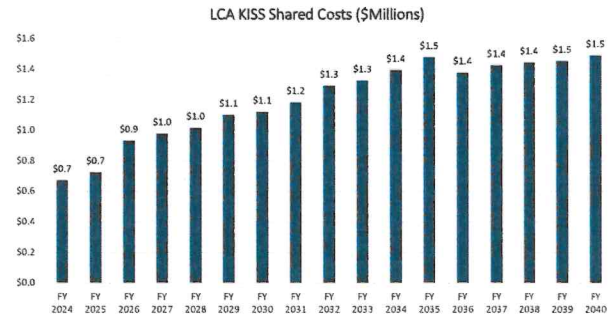
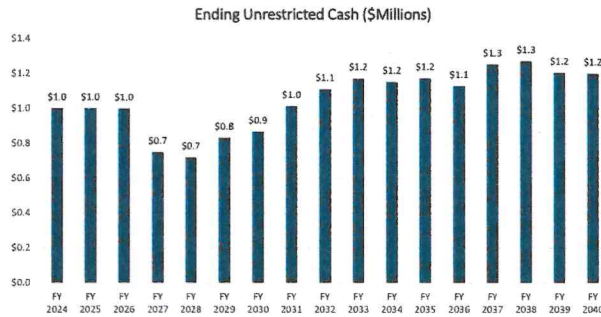
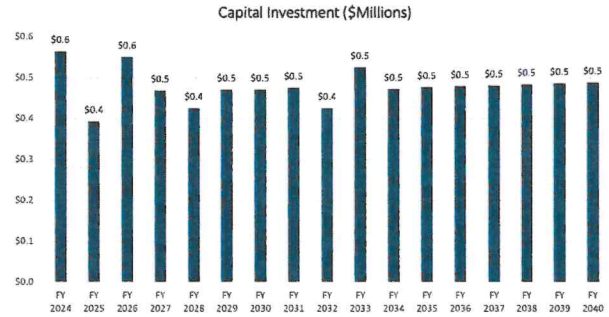
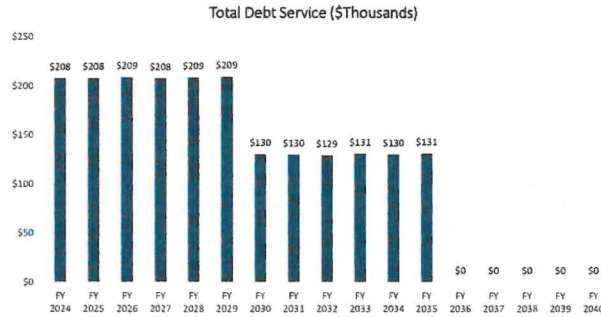
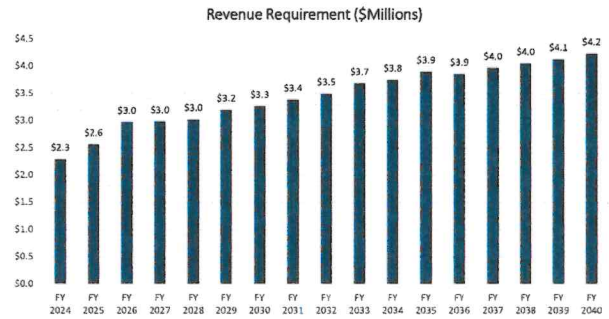
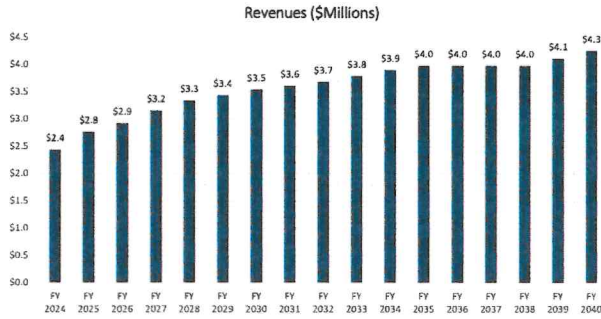
Sincerely,

**Zachary Green**  
*Project Manager*

# Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Salisbury Cashflow Projection		Budget	Budget	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																			
Net Beginning Balance		3,995,188	1,000,000	1,000,000	997,095	747,566	717,347	830,783	866,278	1,011,703	1,109,956	1,170,693	1,151,535	1,173,892	1,127,475	1,253,055	1,269,957	1,205,604	1,199,244
Revenues:																			
Rate Revenue		2,246,650	2,359,000	2,632,000	2,632,000	2,842,560	3,069,965	3,254,163	3,351,788	3,452,341	3,521,388	3,591,816	3,699,570	3,810,557	3,887,788	3,887,788	3,887,788	3,887,788	4,022,029
Rate Revenue (From Adjustment)		-	-	-	210,560	227,405	184,198	97,625	100,554	69,047	70,428	107,754	110,987	77,230	-	-	-	134,241	140,952
Transfers In		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		-	-	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Non-Operating Revenues (includes interest)		28,000	30,000	24,000	24,720	25,462	26,225	27,012	27,823	28,657	29,517	30,402	31,315	32,254	33,222	34,218	35,245	36,302	37,391
Grants per CIP		50,000	50,000	100,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Total Revenue		2,324,650	2,439,000	2,768,000	2,929,280	3,157,426	3,342,388	3,440,800	3,542,164	3,612,045	3,683,333	3,791,973	3,903,872	3,982,042	3,983,009	3,984,006	3,985,033	4,120,331	4,262,372
Operating Expenses:																			
Operating Expenses		(1,032,214)	(1,036,512)	(1,397,227)	(1,439,144)	(1,482,318)	(1,526,788)	(1,572,591)	(1,619,769)	(1,668,362)	(1,718,413)	(1,769,965)	(1,823,064)	(1,877,756)	(1,934,089)	(1,992,112)	(2,051,875)	(2,113,431)	(2,176,834)
Non-Operating Expense		(10,343)	(10,430)	(28,350)	(29,201)	(30,077)	(30,979)	(31,908)	(32,865)	(33,851)	(34,867)	(35,913)	(36,990)	(38,100)	(39,243)	(40,420)	(41,633)	(42,882)	(44,168)
Minor Capital & Equipment		(7,000)	(7,000)	(20,000)	(20,600)	(21,218)	(21,855)	(22,510)	(23,185)	(23,881)	(24,597)	(25,335)	(26,095)	(26,878)	(27,685)	(28,515)	(29,371)	(30,252)	(31,159)
Transfer Out - Cash & Grant Funded Capital		(564,739)	(564,000)	(392,500)	(550,000)	(468,000)	(425,000)	(470,000)	(470,000)	(475,000)	(425,000)	(525,000)	(472,000)	(476,478)	(478,772)	(481,135)	(483,569)	(486,076)	(488,658)
Other (KISS Payments to LCA)		(650,000)	(672,000)	(725,000)	(930,935)	(978,368)	(1,015,717)	(1,098,940)	(1,120,497)	(1,182,803)	(1,290,467)	(1,324,085)	(1,393,311)	(1,477,791)	(1,377,641)	(1,424,922)	(1,442,938)	(1,454,050)	(1,488,599)
Total Operating Expenses		(2,264,296)	(2,289,942)	(2,563,077)	(2,969,879)	(2,979,981)	(3,020,338)	(3,195,949)	(3,266,317)	(3,383,897)	(3,493,344)	(3,680,299)	(3,751,461)	(3,897,003)	(3,857,429)	(3,967,104)	(4,049,385)	(4,126,691)	(4,229,419)
Debt Service:																			
Existing Debt Service		(207,689)	(207,551)	(207,828)	(208,931)	(207,664)	(208,614)	(209,356)	(130,422)	(129,895)	(129,251)	(130,832)	(130,054)	(131,456)	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service		(207,689)	(207,551)	(207,828)	(208,931)	(207,664)	(208,614)	(209,356)	(130,422)	(129,895)	(129,251)	(130,832)	(130,054)	(131,456)	-	-	-	-	-
Coverage:																			
Additional Revenue Needed from Rate Increase (Senior Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																			
Additional Rate Revenue for Minimum Operating Reserve Target		-	-	-	259,887	337,359	208,201	129,361	10,001	-	-	-	17,919	77,230	-	-	-	134,241	140,952
Ending Cash Balance		1,382,821	941,507	997,095	747,566	717,347	830,783	866,278	1,011,703	1,109,956	1,170,693	1,151,535	1,173,892	1,127,475	1,253,055	1,269,957	1,205,604	1,199,244	1,232,197
Required Rate Increase:																			
Calculated % Rate Increase		0.0%	0.0%	0.0%	8.0%	8.0%	6.0%	3.0%	3.0%	2.0%	2.0%	3.0%	3.0%	2.0%	0.0%	0.0%	0.0%	3.5%	3.5%
Additional Revenue from Rate Increase		-	-	-	210,560	227,405	184,198	97,625	100,554	69,047	70,428	107,754	110,987	77,230	-	-	-	134,241	140,952
CIP:																			
Operating Cash Funded Capital		-	(564,000)	(42,500)	(150,000)	(68,000)	(25,000)	(70,000)	(70,000)	(75,000)	(25,000)	(125,000)	(72,000)	(76,478)	(78,772)	(81,135)	(83,569)	(86,076)	(88,658)
SRP I&I Capital		-	-	(350,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)
Cash-funded		-	-	(350,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)
Debt-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																			
Residential Bill @ 5 CCF per month		\$	332.00	\$	332.00	\$	358.56	\$	387.24	\$	410.48	\$	422.79	\$	435.48	\$	444.19	\$	453.07
MHI Burden			0.3%		0.3%		0.3%		0.4%		0.4%		0.4%		0.4%		0.4%		0.3%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Mr. Shane Pepe  
Borough Manager  
Borough of Emmaus  
28 S. 4<sup>th</sup> Street  
Emmaus, PA 18049

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Pepe:

Raftelis is pleased to provide this summary report for the Borough of Emmaus as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Emmaus:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (Emmaus plans to issue \$4,000,000 in sewer debt in FY 2027).
- Inflow & Infiltration related capital expenditures at 100% PAYGO financing. (Emmaus currently has forecast I&I capital spending of \$100,000 between FY 2026-2032).
- A cash reserve requirement of 90 days of operating expenses.
- Rate increases were smoothed to avoid drastic increases in any particular year. Larger increases are required early in the forecast due to the planned debt issuance and an expected increase in LCA payments due to the new flow-based allocation method.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Borough’s staff for the support provided during this project.

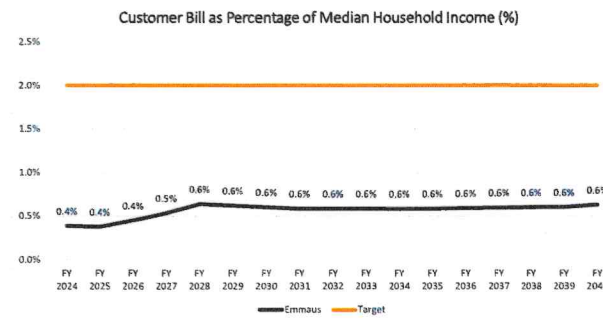
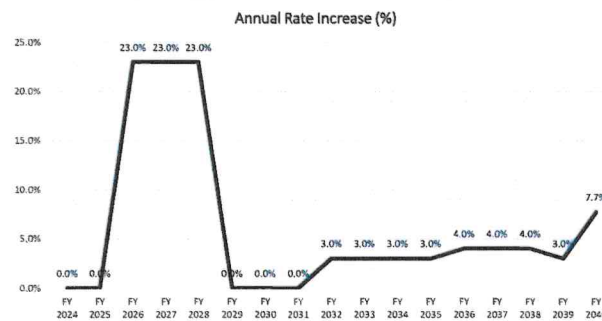
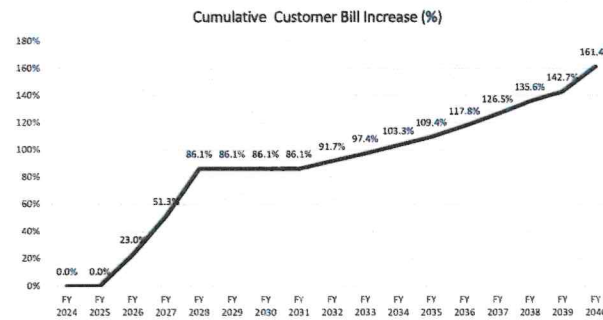
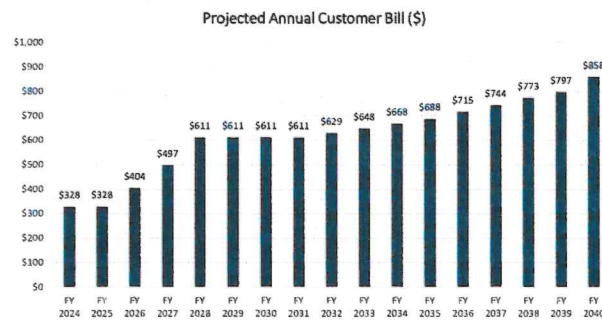
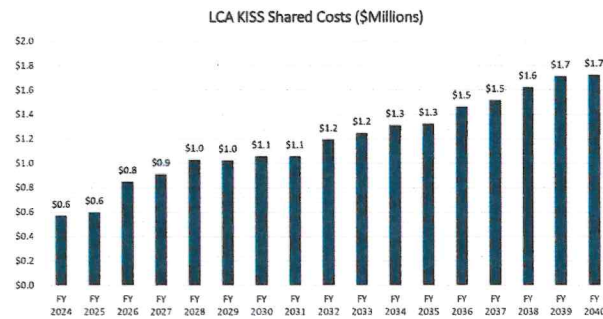
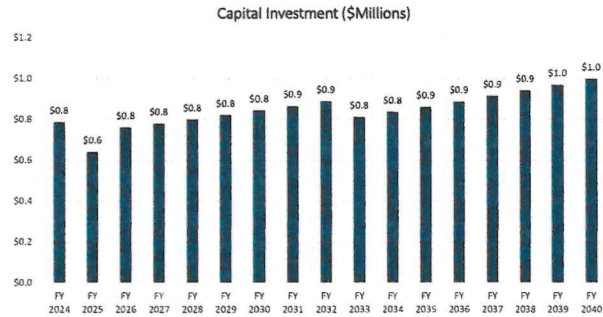
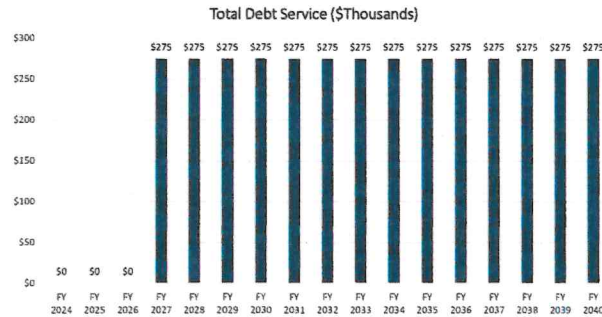
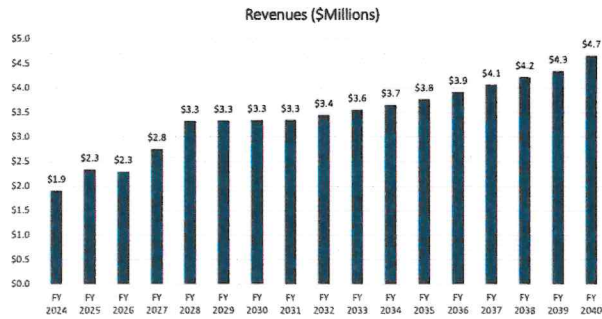
Sincerely,

**Zachary Green**  
*Project Manager*

## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Emmaus Cashflow Projection	Budget	Actuals	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																		
Net Beginning Balance	195,000	375,000	770,000	914,093	611,539	388,149	564,328	702,959	763,798	778,814	700,531	709,330	700,162	725,133	691,453	691,815	674,100	623,006
Revenues:																		
Rate Revenue	1,863,684	1,610,219	1,610,219	1,610,219	1,980,569	2,436,100	2,996,403	2,996,403	2,996,403	2,996,403	3,086,296	3,178,884	3,274,251	3,372,478	3,507,378	3,647,673	3,793,580	3,907,387
Rate Revenue (From Adjustment)	-	-	-	370,350	455,531	560,303	-	-	-	89,892	92,589	95,367	98,228	134,899	140,295	145,907	113,807	302,079
Transfers In	275,228	266,465	266,465	274,459	282,693	291,174	299,909	308,906	318,173	327,718	337,550	347,676	358,107	368,850	379,915	391,313	403,052	415,144
Non-Rate Revenues	44,000	25,500	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000
Non-Operating Revenues (includes interest)	1,000	-	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	6,921	7,129	7,343	7,563	7,790
Grants per CIP	-	-	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	2,183,912	1,902,184	2,334,684	2,288,178	2,752,098	3,321,041	3,329,940	3,339,106	3,348,547	3,448,163	3,550,768	3,656,451	3,765,305	3,911,149	4,062,717	4,220,235	4,346,002	4,660,400
Operating Expenses:																		
Operating Expenses	(909,078)	(919,472)	(952,724)	(981,306)	(1,010,745)	(1,041,067)	(1,072,299)	(1,104,468)	(1,137,602)	(1,171,730)	(1,206,882)	(1,243,089)	(1,280,381)	(1,318,793)	(1,358,357)	(1,399,107)	(1,441,081)	(1,484,313)
Non-Operating Expense	(750)	(750)	(750)	(773)	(796)	(820)	(844)	(869)	(896)	(922)	(950)	(979)	(1,008)	(1,038)	(1,069)	(1,101)	(1,134)	(1,168)
Minor Capital & Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital	(725,617)	(787,058)	(640,500)	(759,715)	(779,506)	(799,892)	(820,888)	(842,515)	(864,790)	(887,734)	(911,366)	(935,707)	(960,778)	(986,602)	(1,013,200)	(1,040,596)	(1,068,814)	(1,097,878)
Other (MISS Payments to LCA)	(571,220)	(569,904)	(596,617)	(848,939)	(909,529)	(1,028,172)	(1,022,366)	(1,055,503)	(1,055,331)	(1,191,148)	(1,247,860)	(1,310,934)	(1,323,255)	(1,463,485)	(1,514,818)	(1,622,234)	(1,711,157)	(1,723,245)
Total Operating Expenses	(2,206,665)	(2,277,184)	(2,190,591)	(2,590,733)	(2,700,576)	(2,869,951)	(2,916,398)	(3,003,356)	(3,058,620)	(3,251,535)	(3,267,058)	(3,390,708)	(3,465,423)	(3,669,917)	(3,787,444)	(3,963,039)	(4,122,185)	(4,206,605)
Debt Service:																		
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)	-	-	-	-	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)
Total Debt Service	-	-	-	-	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)	(274,911)
Coverage:																		
Additional Revenue Needed from Rate Increase (Senior Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)	-	-	-	-	214,106	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																		
Additional Rate Revenue for Minimum Operating Reserve Target	197,828	372,344	-	158,812	253,275	395,975	-	-	-	-	-	33,711	24,004	139,016	166,774	227,142	278,861	302,079
Ending Cash Balance	172,247	-	914,093	611,539	388,149	564,328	702,959	763,798	778,814	700,531	709,330	700,162	725,133	691,453	691,815	674,100	623,006	801,890
Required Rate Increase:																		
Calculated % Rate Increase	0%	0%	0.0%	23.0%	23.0%	23.0%	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%	3.0%	4.0%	4.0%	4.0%	3.0%	7.7%
Additional Revenue from Rate Increase	-	-	-	370,350	455,531	560,303	-	-	-	89,892	92,589	95,367	98,228	134,899	140,295	145,907	113,807	302,079
CIP:																		
Operating Cash Funded Capital	(725,617)	(787,058)	(640,500)	(659,715)	(679,506)	(699,892)	(720,888)	(742,515)	(764,790)	(787,734)	(811,366)	(835,707)	(860,778)	(886,602)	(913,200)	(940,596)	(968,814)	(997,878)
SRP I&I Capital	-	-	-	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	-	-	-	-	-	-	-	-
Cash-funded	-	-	-	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	-	-	-	-	-	-	-	-
Debt-funded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																		
Residential Bill @ 5 CCF per month	\$ 328.31	\$ 328.31	\$ 403.82	\$ 496.70	\$ 610.94	\$ 610.94	\$ 610.94	\$ 610.94	\$ 610.94	\$ 629.27	\$ 648.15	\$ 667.60	\$ 687.62	\$ 715.13	\$ 743.73	\$ 773.48	\$ 796.69	\$ 858.28
MHI Burden	0.4%	0.4%	0.4%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Ms. Melissa Wehr  
Township Manager  
Hanover Township  
2202 Grove Road  
Allentown, PA 18109

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Ms. Wehr:

Raftelis is pleased to provide this summary report for Hanover Township as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for Hanover:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service.
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing.
- A cash reserve requirement of 90 days of operating expenses.
- Income data was sourced from the Census and escalated to the current year.

We thank you and the Township’s staff for the support provided during this project.

Sincerely,

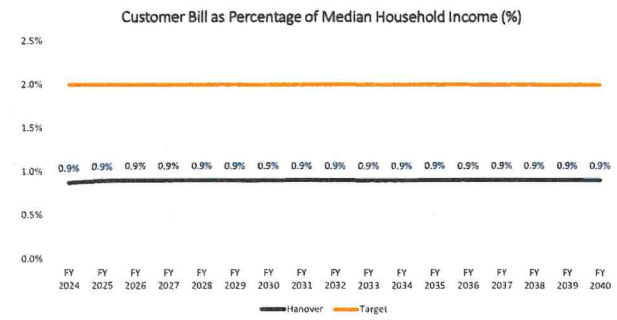
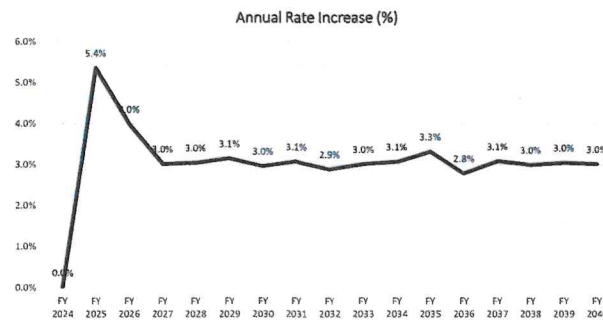
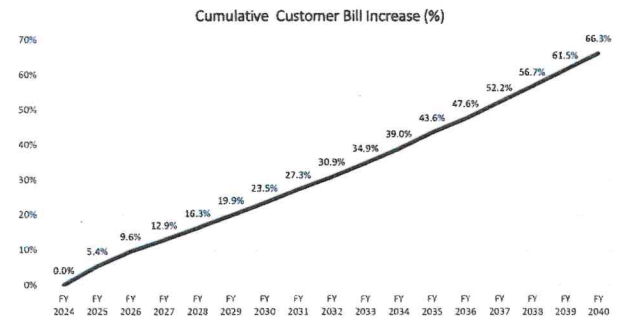
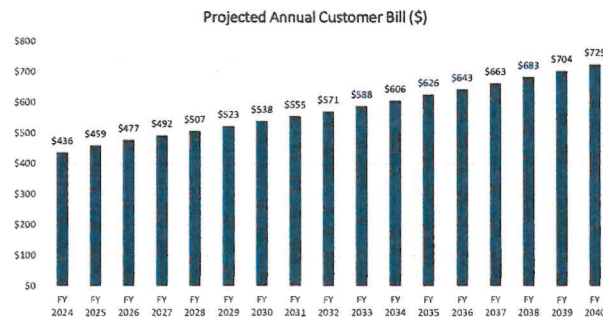
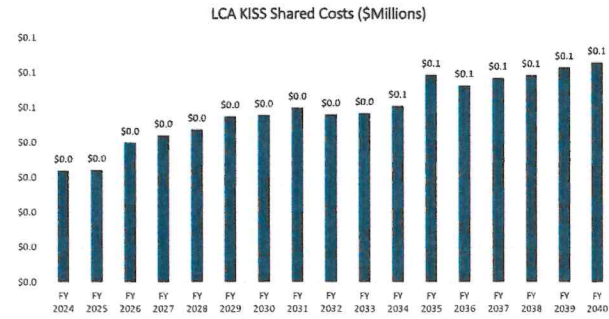
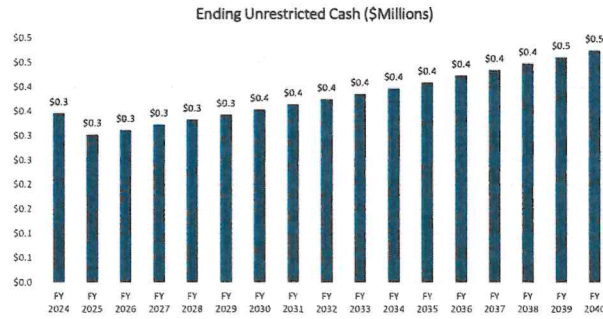
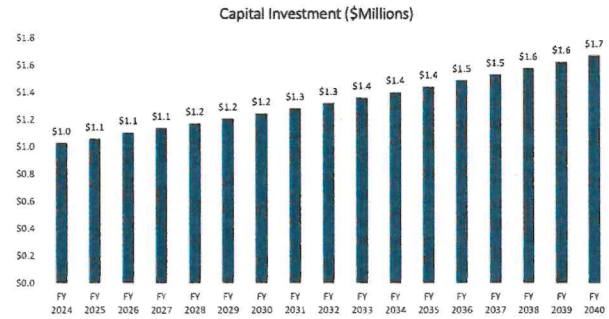
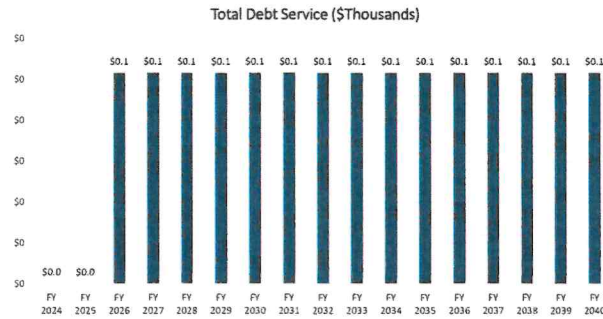
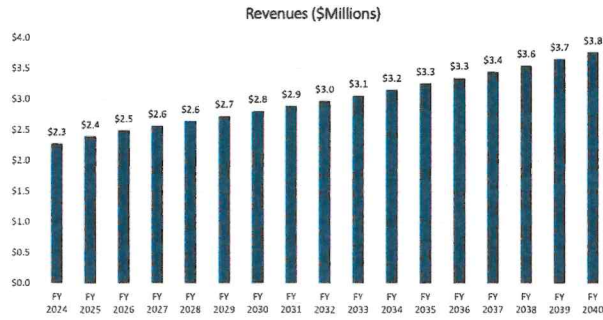
**Zachary Green**  
*Project Manager*

## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Hanover Cashflow Projection	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<b>Fund Balance:</b>																		
Net Beginning Balance	974,000	345,500	303,021	311,910	322,975	332,897	342,987	353,882	364,241	375,323	385,741	397,027	409,115	423,216	434,716	447,865	461,065	474,997
<b>Revenues:</b>																		
Rate Revenue	1,641,500	1,641,500	2,234,934	2,354,644	2,448,454	2,522,183	2,598,954	2,680,667	2,760,015	2,844,671	2,926,470	3,014,497	3,106,925	3,209,914	3,299,225	3,400,758	3,502,313	3,608,940
Rate Revenue (From Adjustment)	-	593,434	119,710	93,810	73,729	76,772	81,713	79,347	84,656	81,799	88,027	92,429	102,989	89,311	101,533	101,555	106,626	108,623
Transfers In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500
Non-Operating Revenues (includes interest)	14,000	14,420	14,853	15,298	15,757	16,230	16,717	17,218	17,735	18,267	18,815	19,379	19,961	20,559	21,176	21,812	22,466	23,140
Grants per CIP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Revenue</b>	<b>1,683,000</b>	<b>2,276,854</b>	<b>2,396,997</b>	<b>2,491,252</b>	<b>2,565,440</b>	<b>2,642,684</b>	<b>2,724,884</b>	<b>2,804,733</b>	<b>2,889,905</b>	<b>2,972,237</b>	<b>3,060,811</b>	<b>3,153,804</b>	<b>3,257,375</b>	<b>3,347,284</b>	<b>3,449,434</b>	<b>3,551,625</b>	<b>3,658,906</b>	<b>3,768,203</b>
<b>Operating Expenses:</b>																		
Operating Expenses	(1,115,719)	(1,149,191)	(1,183,666)	(1,219,176)	(1,255,752)	(1,293,424)	(1,332,227)	(1,372,194)	(1,413,359)	(1,455,760)	(1,499,433)	(1,544,416)	(1,590,749)	(1,638,471)	(1,687,625)	(1,738,254)	(1,790,401)	(1,844,114)
Depreciation	(75,000)	(77,250)	(79,568)	(81,955)	(84,413)	(86,946)	(89,554)	(92,241)	(95,008)	(97,858)	(100,794)	(103,818)	(106,932)	(110,140)	(113,444)	(116,848)	(120,353)	(123,964)
Non-Operating Expense	(30,000)	(30,900)	(31,827)	(32,782)	(33,765)	(34,778)	(35,822)	(36,896)	(38,003)	(39,143)	(40,317)	(41,527)	(42,773)	(44,056)	(45,378)	(46,739)	(48,141)	(49,585)
Minor Capital & Equipment	(1,000,000)	(1,030,000)	(1,060,900)	(1,106,227)	(1,139,414)	(1,173,596)	(1,208,804)	(1,245,068)	(1,282,420)	(1,320,893)	(1,360,520)	(1,401,335)	(1,443,375)	(1,486,677)	(1,531,277)	(1,577,215)	(1,624,532)	(1,673,268)
Transfer Out - Cash & Grant Funded Capital	(90,781)	(31,993)	(32,147)	(39,944)	(42,071)	(43,747)	(47,480)	(47,873)	(49,929)	(48,061)	(48,358)	(50,518)	(59,342)	(56,337)	(58,458)	(59,266)	(61,443)	(62,993)
<b>Total Operating Expenses</b>	<b>(2,311,500)</b>	<b>(2,319,333)</b>	<b>(2,388,107)</b>	<b>(2,480,083)</b>	<b>(2,555,415)</b>	<b>(2,632,491)</b>	<b>(2,713,886)</b>	<b>(2,794,271)</b>	<b>(2,878,720)</b>	<b>(2,961,715)</b>	<b>(3,049,422)</b>	<b>(3,141,613)</b>	<b>(3,243,171)</b>	<b>(3,335,681)</b>	<b>(3,436,182)</b>	<b>(3,538,322)</b>	<b>(3,644,871)</b>	<b>(3,753,923)</b>
<b>Debt Service:</b>																		
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)	-	-	-	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)	(103)
<b>Total Debt Service</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>	<b>(103)</b>
<b>Coverage:</b>																		
Additional Revenue Needed from Rate Increase (Senior Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Calculations:</b>																		
Additional Rate Revenue for Minimum Operating Reserve Target	-	593,434	119,710	93,810	73,729	76,772	81,713	79,347	84,656	81,799	88,027	92,429	102,989	89,311	101,533	101,555	106,626	108,623
<b>Ending Cash Balance</b>	<b>345,500</b>	<b>303,021</b>	<b>311,910</b>	<b>322,975</b>	<b>332,897</b>	<b>342,987</b>	<b>353,882</b>	<b>364,241</b>	<b>375,323</b>	<b>385,741</b>	<b>397,027</b>	<b>409,115</b>	<b>423,216</b>	<b>434,716</b>	<b>447,865</b>	<b>461,065</b>	<b>474,997</b>	<b>489,173</b>
<b>Required Rate Increase:</b>																		
Calculated % Rate Increase	0.0%	36.2%	5.4%	4.0%	3.0%	3.0%	3.1%	3.0%	3.1%	2.9%	3.0%	3.1%	3.3%	2.8%	3.1%	3.0%	3.0%	3.0%
Additional Revenue from Rate Increase	-	593,434	119,710	93,810	73,729	76,772	81,713	79,347	84,656	81,799	88,027	92,429	102,989	89,311	101,533	101,555	106,626	108,623
<b>CIP:</b>																		
Operating Cash Funded Capital	(1,000,000)	(1,030,000)	(1,060,900)	(1,092,727)	(1,139,414)	(1,173,596)	(1,208,804)	(1,245,068)	(1,282,420)	(1,320,893)	(1,360,520)	(1,401,335)	(1,443,375)	(1,486,677)	(1,531,277)	(1,577,215)	(1,624,532)	(1,673,268)
SRP I&I Capital	-	-	-	(15,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash-funded	-	-	-	(13,500)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt-funded	-	-	-	(1,500)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Customer Bill:</b>																		
Residential Bill @ 5 CCF per month	\$	435.72	\$	459.06	\$	477.34	\$	491.72	\$	506.69	\$	522.62	\$	538.09	\$	554.59	\$	570.54
MHI Burden		0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.





February 5, 2025

Ms. Liesel Gross  
Chief Executive Officer  
Lehigh County Authority  
1053 Spruce Road  
Allentown, PA 18106

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Ms. Gross:

Raftelis is pleased to provide this summary report for the Common Rate Customers of Lowhill, Weisenberg, and Upper Milford as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for the Common Rate Customers:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service.
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing. (The Common Rate Customers have \$200,000 of I&I capital planned for FY 2026).
- A cash reserve requirement of 90 days of operating expenses.
- No rate increases are projected for the first ten years of the forecast. Small rate increases were projected and smoothed toward the end of the forecast to avoid sudden increases in any given year.
- Income data was sourced from the Census and escalated to the current year.
- KISS CRC financials detail general and administrative CRC financial and rate impacts where noted only.

It has been a pleasure working with you, and we thank you and the Authority’s staff for the support provided during this project.

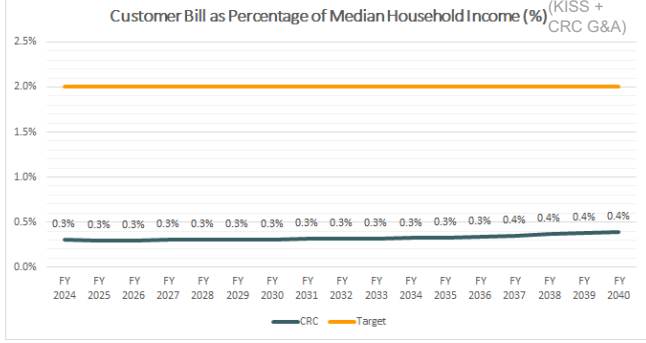
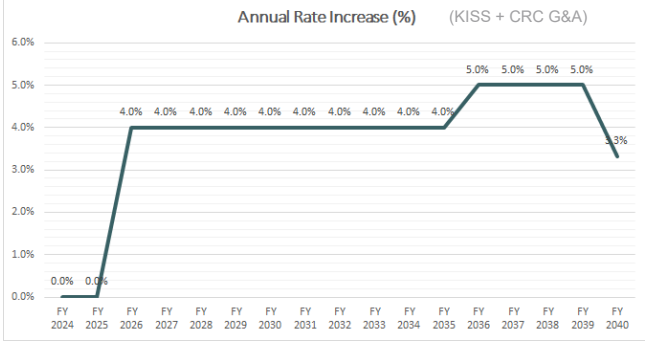
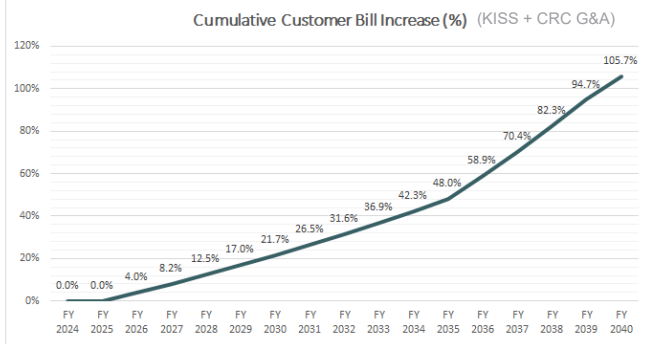
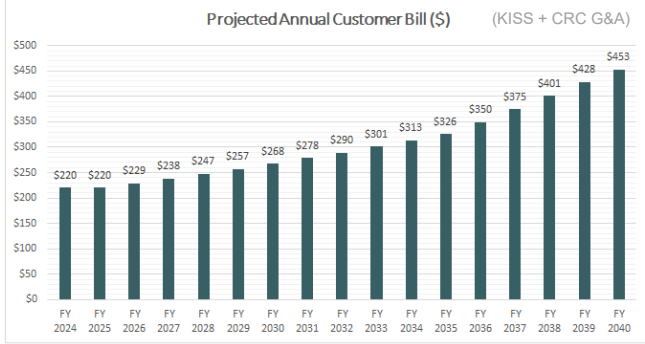
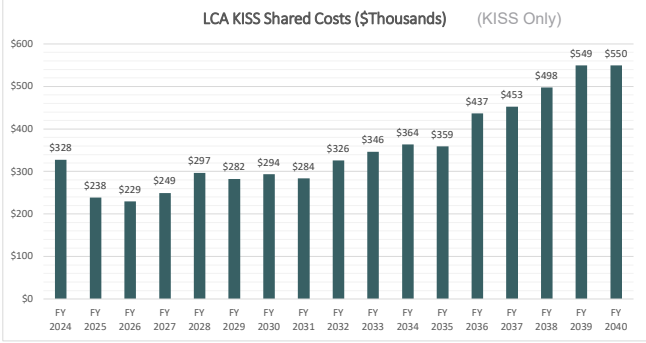
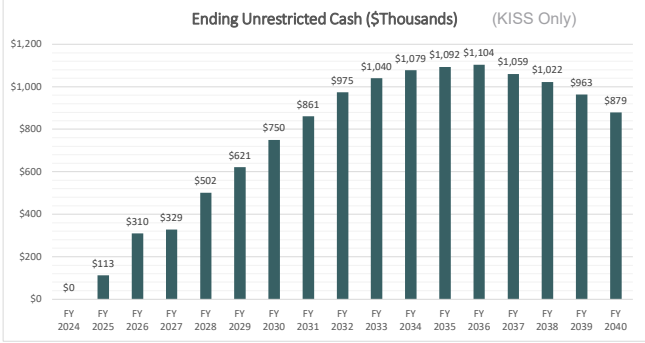
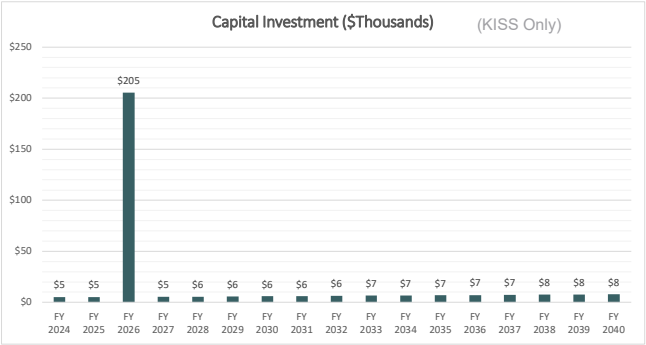
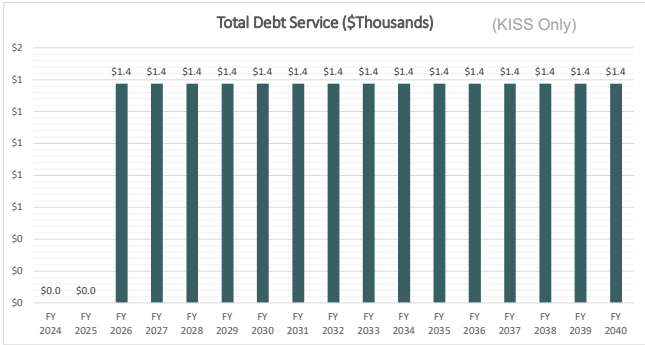
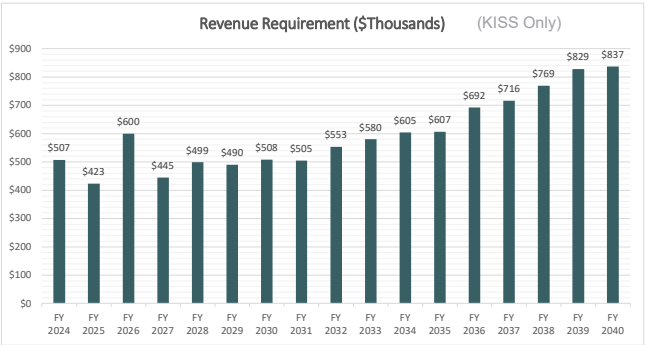
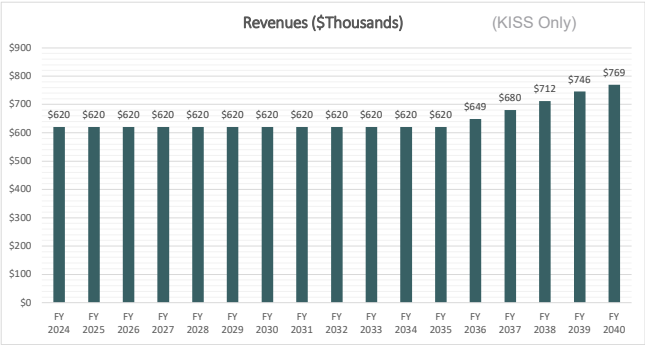
Sincerely,

**Zachary Green**  
*Project Manager*

# Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

Common Rate Customers Cashflow Projections		Actuals	Actuals	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																			
Net Beginning Balance			-	112,743	309,591	328,533	501,670	621,469	749,954	860,809	974,724	1,039,986	1,078,557	1,092,482	1,103,901	1,059,282	1,021,662	963,059	878,805
Revenues:																			
Rate Revenue		491,695	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	584,041	613,243	643,905	676,100	709,905
Rate Revenue (From Adjustment)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	29,202	30,662	32,195	33,805
Transfers In		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		27,525	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933	35,933
Non-Operating Revenues Includes Interest)		(44,599)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grants per CIP		534,248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue		1,008,869	619,974	619,974	619,974	619,974	619,974	619,974	619,974	619,974	619,974	619,974	619,974	619,974	649,176	679,838	712,033	745,838	769,449
Operating Expenses:																			
Operating Expenses		(430,423)	(136,106)	(140,189)	(144,395)	(148,727)	(153,189)	(157,384)	(162,518)	(167,393)	(172,415)	(177,587)	(182,915)	(188,403)	(194,055)	(199,876)	(205,873)	(212,049)	(218,410)
Non-Operating Expense		(919)	(38,318)	(39,468)	(40,632)	(41,871)	(43,127)	(44,421)	(45,754)	(47,126)	(48,540)	(49,996)	(51,496)	(53,041)	(54,632)	(56,271)	(57,959)	(59,698)	(61,489)
Minor Capital & Equipment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital		(381,825)	(5,000)	(5,150)	(185,305)	(5,464)	(5,628)	(5,796)	(5,970)	(6,149)	(6,334)	(6,524)	(6,720)	(6,921)	(7,129)	(7,343)	(7,563)	(7,790)	(8,024)
Other (KISS Payments to LIA)		(278,462)	(327,807)	(238,320)	(229,307)	(249,400)	(296,857)	(282,114)	(293,502)	(284,016)	(326,048)	(345,921)	(363,343)	(358,816)	(436,605)	(452,594)	(497,867)	(549,181)	(549,527)
Total Operating Expenses		(1,091,629)	(507,231)	(423,126)	(599,658)	(445,462)	(498,801)	(490,115)	(507,744)	(504,685)	(553,337)	(580,029)	(604,674)	(607,180)	(692,421)	(716,084)	(769,262)	(828,718)	(837,449)
Debt Service:																			
Existing Debt Service		(79,429)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)		-	-	-	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)
Total Debt Service		(79,429)	-	-	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)	(1,375)
Coverage:																			
Additional Revenue Needed from Rate Increase (Senior Debt)		284,580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	12,198	4,806	25,413	50,708	23,610
Cash Calculations:																			
Additional Rate Revenue for Minimum Operating Reserve Target		54,430	3,235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance		(162,189)	112,743	309,591	328,533	501,670	621,469	749,954	860,809	974,724	1,039,986	1,078,557	1,092,482	1,103,901	1,059,282	1,021,662	963,059	878,805	809,480
Required Rate Increase:																			
Calculated KISS % Rate Increase		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	5.0%	5.0%	3.3%
Additional Revenue from Rate Increase		-	-	-	-	-	-	-	-	-	-	-	-	-	29,202	30,662	32,195	33,805	23,610
CRC General & Administrative % Rate Increase		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	1.0%	4.0%
CIP:																			
Operating Cash Funded Capital		(381,825)	(5,000)	(5,150)	(5,305)	(5,464)	(5,628)	(5,796)	(5,970)	(6,149)	(6,334)	(6,524)	(6,720)	(6,921)	(7,129)	(7,343)	(7,563)	(7,790)	(8,024)
SRP I&I Capital		-	-	-	(200,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash-funded		-	-	-	(180,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital		-	-	-	(20,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																			
Residential Bill @ 5 CCF per month (KISS Portion)		\$	220.00	\$	220.00	\$	220.00	\$	220.00	\$	220.00	\$	220.00	\$	220.00	\$	231.00	\$	276.31
CRC General & Administrative Portion		\$	-	\$	-	\$	8.80	\$	17.95	\$	27.47	\$	37.37	\$	47.66	\$	58.37	\$	69.50
Total Mini Burden			0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.



February 5, 2025

Mr. Randy Cope  
Township Manager  
North Whitehall Township  
3256 Levans Road  
Coplay, PA 18037

**Subject: Lehigh County Authority – Kline’s Island Sewer System Act 537 Cashflow Projections**

Dear Mr. Cope:

Raftelis is pleased to provide this summary report for North Whitehall Township as part of the Act 537 process for the Lehigh County Authority (LCA) and the Kline’s Island Sewer System (KISS). The purpose of this modeling was to demonstrate current and future financial sufficiency of the system and its signatories to the Pennsylvania Department of Environmental Protection, particularly given the need for capital upgrades at the KISS plant.

We first built a financial model for the KISS system and then allocated its projected costs proportionally to all the signatories based on flow. We then developed simplified cashflow models for the signatories using publicly available financial data or data that they provided. We next met with the signatories individually to verify data, explain the project, set cash reserve and debt service coverage targets if applicable, and discuss rate adjustments. We then finalized each community’s projections and developed dashboards to visualize key data. These projections are not meant to replace full rate studies nor to make rate recommendations, but to provide a general analysis of financial sufficiency.

Key assumptions that were made for North Whitehall:

- Debt Service Coverage Requirements of 120% for Senior Lien Debt Service and 110% for Subordinate Lien Debt Service. (North Whitehall has no current sewer debt).
- Inflow & Infiltration related capital expenditures at 90% PAYGO and 10% debt financing. (North Whitehall has no current I&I capital spending planned during the forecast period).
- A cash reserve requirement of 90 days of operating expenses.
- Payments to the Coplay Whitehall Sewer Authority (CWSA) were forecast to increase by the projected annual rate increase of the CWSA system.
- Income data was sourced from the Census and escalated to the current year.

It has been a pleasure working with you, and we thank you and the Township’s staff for the support provided during this project.

Sincerely,

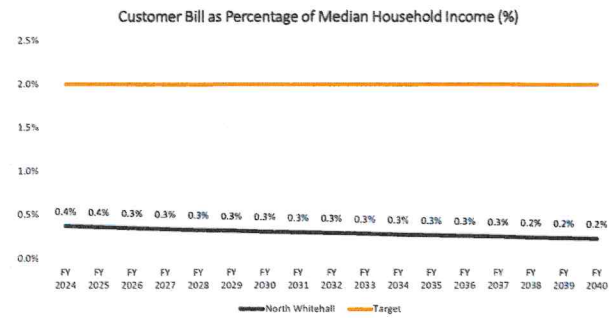
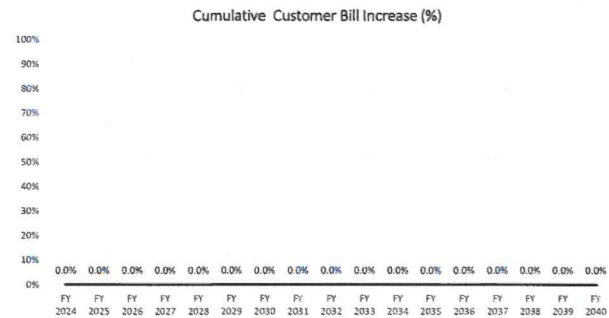
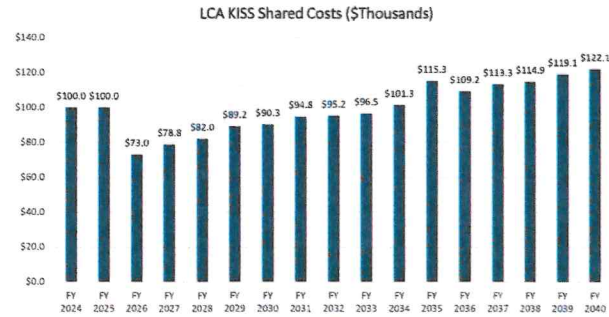
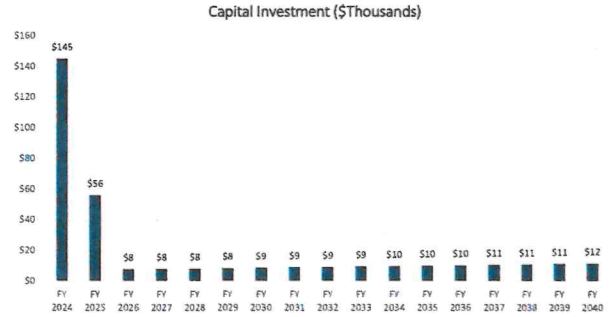
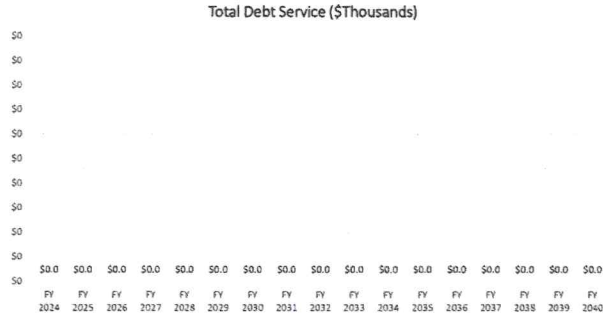
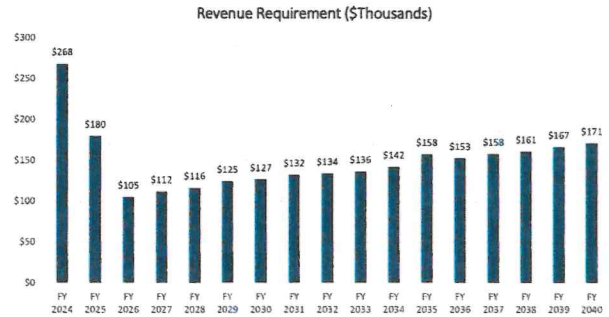
**Zachary Green**  
*Project Manager*



## Lehigh County Authority - Kline's Island Sewer System Municipal Cashflow Projections

North Whitehall Cashflow Projection		Actual	Budgeted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Description		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Fund Balance:																			
Net Beginning Balance		511,142	1,366,326	756,814	873,589	990,589	1,101,440	1,208,684	1,308,331	1,406,483	1,499,811	1,592,297	1,683,054	1,768,626	1,839,718	1,916,408	1,988,518	2,058,573	2,123,912
Revenues:																			
Rate Revenue		452,149	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000
Rate Revenue (From Adjustment)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers In		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues		13,790	6,792	56,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792	6,792
Non-Operating Revenues (includes interest)		-	8,500	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095	26,878	27,685	28,515	29,371	30,252	31,159
Grants per CIP		-	72,500	25,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue		465,939	282,792	296,792	222,392	223,010	223,647	224,302	224,977	225,673	226,389	227,127	227,887	228,670	229,477	230,307	231,163	232,044	232,951
Operating Expenses:																			
Operating Expenses		(104,992)	(23,317)	(24,017)	(24,737)	(25,479)	(26,243)	(27,031)	(27,842)	(28,677)	(29,537)	(30,423)	(31,336)	(32,276)	(33,244)	(34,242)	(35,269)	(36,327)	(37,417)
Non-Operating Expense		(76,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minor Capital & Equipment		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer Out - Cash & Grant Funded Capital		-	(145,000)	(56,000)	(7,680)	(7,910)	(8,148)	(8,392)	(8,644)	(8,903)	(9,170)	(9,445)	(9,729)	(10,021)	(10,321)	(10,631)	(10,950)	(11,278)	(11,617)
Other (Payments to CWSA)		(175,000)	(100,000)	(100,000)	(72,975)	(78,770)	(82,011)	(89,233)	(90,340)	(94,765)	(95,195)	(96,502)	(101,250)	(115,281)	(109,222)	(113,325)	(114,888)	(119,100)	(122,098)
Total Operating Expenses		(284,750)	(268,317)	(180,017)	(105,392)	(112,159)	(116,402)	(124,656)	(126,826)	(132,345)	(133,903)	(136,370)	(142,315)	(157,578)	(152,787)	(158,197)	(161,107)	(166,705)	(171,131)
Debt Service:																			
Existing Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Service (30 yr term, 1.0% issuance cost, 5.4% rate)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coverage:																			
Additional Revenue Needed from Rate Increase (Senior Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Revenue Needed from Rate Increase (Subordinate Debt)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash Calculations:																			
Additional Rate Revenue for Minimum Operating Reserve Target		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending Cash Balance		371,843	1,380,801	873,589	990,589	1,101,440	1,208,684	1,308,331	1,406,483	1,499,811	1,592,297	1,683,054	1,768,626	1,839,718	1,916,408	1,988,518	2,058,573	2,123,912	2,185,732
Required Rate Increase:																			
Calculated % Rate Increase		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Additional Revenue from Rate Increase		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIP:																			
Operating Cash Funded Capital		-	(145,000)	(56,000)	(7,680)	(7,910)	(8,148)	(8,392)	(8,644)	(8,903)	(9,170)	(9,445)	(9,729)	(10,021)	(10,321)	(10,631)	(10,950)	(11,278)	(11,617)
SRP I&I Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt-funded		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant Funded Capital		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Customer Bill:																			
Residential Bill @ 5 CCF per month		\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00	\$ 405.00
MHI Burden		0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%

\*These projections are based on a set of assumptions and are to be used only for the intended purpose as stated in the cover letter. We provide no guarantees of future performance. These projections do not constitute municipal financing advice.



## UPDATED Summary of Improvements & Costs

Plan Component (2026-2030 <u>KISS CAPEX</u> )	Cost Estimate
Municipal Sewer Rehabilitation Programs (SRPs)	\$55 - 60 million
Kline's Island Wastewater Treatment Plant*	\$60 – 65 million
Proposed Relief Interceptors	\$0 million
Western Lehigh Interceptor System	\$8-10 million
<b>TOTAL PLAN COST ESTIMATE</b>	<b>\$123 – \$135 million</b>

*\*includes City Interceptor System*

### **Other CAPEX Projects:**

*Other Local Items*

*Pretreatment Plant*

*By respective municipality*

*Cost under review w/ industries*



## Projected 2026-2030 Source Reduction Program (SRP) Costs

Customer - Total	Total	%	2026	2027	2028	2029	2030
Alburtis - Total	-	0.0%	-	-	-	-	-
Macungie - Total	-	0.0%	-	-	-	-	-
Upper Macungie - Total	3,750,000	7.1%	1,000,000	1,000,000	750,000	750,000	250,000
Lower Macungie - Total	7,500,000	14.2%	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Lowhill - Total	-	0.0%	-	-	-	-	-
Weisenberg - Total	-	0.0%	-	-	-	-	-
Upper Milford - Total	200,000	0.4%	200,000	-	-	-	-
City of Allentown - Total	26,500,000	50.3%	5,000,000	5,000,000	5,250,000	5,250,000	6,000,000
Hanover - Total	15,000	0.0%	15,000	-	-	-	-
Emmaus - Total	1,620,000	3.1%	575,000	-	180,000	550,000	315,000
Salisbury - Total	2,000,000	3.8%	400,000	400,000	400,000	400,000	400,000
South Whitehall - Total	2,700,000	5.1%	540,000	540,000	540,000	540,000	540,000
North Whitehall - Total	-	0.0%	-	-	-	-	-
Coplay - Total	-	0.0%	-	-	-	-	-
Whitehall - Total	1,160,000	2.2%	25,000	25,000	370,000	370,000	370,000
LCA - Total	7,230,000	13.7%	250,000	3,000,000	3,000,000	300,000	680,000
<b>TOTAL</b>	<b>52,675,000</b>	<b>100%</b>	<b>9,505,000</b>	<b>11,465,000</b>	<b>11,990,000</b>	<b>9,660,000</b>	<b>10,055,000</b>

*Note: City MH inspection/rehab program is not included above  
(handled elsewhere in the Raftelis model)*

LEHIGH COUNTY AUTHORITY  
ALLENTOWN DIVISION  
2025-2029 CAPITAL PROGRAM  
WASTEWATER

Project #	Name or Title of Proposal	Prj. Category	(1) Funding	Approval Stage (1)	This Capital Program						
					2024 Budget Approved	2025 Year 1	2026 Year 2	2027 Year 3	2028 Year 4	2029 Year 5	2025-2029 Total
	Operating/Capital Reserve Funds										
	<b><u>ANNUAL PROJECTS</u></b>										
AD:SA	Annual Operating	AM	LCA	A	\$ 1,955,000	\$ 1,955,000	\$ 1,955,000	\$ 1,955,000	\$ 1,955,000	\$ 1,955,000	\$ 1,955,000
	Sub-total Annual				\$ 2,706,000	\$ 2,715,000	\$ 2,065,000	\$ 2,035,000	\$ 2,165,000	\$ 1,975,000	\$ 10,955,000
	<b><u>Non-CCRC Projects</u></b>										
AD:SC	Industrial Retention	AM	LCA	C	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
AD:SC	MSM	CA/OS	LCA	S	\$ 1,000,000	\$ 0				\$ 1,000,000	\$ 1,000,000
AD:SC	Municipal Infrastructure and Solid Waste	R	LCA	S	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
AD:SC	MSM Retention or Solid		LCA	S	\$ 0	\$ 0	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 1,000,000
AD:SC	MSM Retention		LCA	S	\$ 0	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 1,000,000
	Sub-total Allentown Division Wastewater Capital Funded by LCA				\$ 2,460,000	\$ 1,350,000	\$ 1,950,000	\$ 2,000,000	\$ 1,250,000	\$ 1,400,000	\$ 7,950,000
	<b><u>Large Projects and CCRC Projects</u></b>										
AD:SC	MSM Solid Retention	AM	CCRC	C	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Solid Retention	AM	CCRC	D	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Solid Retention	System	CCRC	D	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Solid Retention	R	CCRC	D	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Solid Retention	AM	CCRC (1)	S	\$ 0	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Solid Retention	R	CCRC (1)		\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
AD:SC	MSM Solid Retention	R	CCRC (1)	S	\$ 0	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 1,000,000
	Sub-total Allentown Division Wastewater Large & CCRC Projects				\$ 7,400,000	\$ 14,900,000	\$ 27,350,000	\$ 27,750,000	\$ 7,250,000	\$ 5,250,000	\$ 82,500,000
	<b><u>Act 537 Plan Development Projects</u></b>										
AD:SC	MSM Alameda	R	City	S	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 0	\$ 0	\$ 0	\$ 1,000,000
AD:SC	MSM Alameda	R	LCA	V	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000				\$ 1,000,000
	Sub-total Allentown Division Wastewater Capital Funded by the City				\$ 800,000	\$ 450,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 650,000
	GRAND TOTAL				\$ 13,366,000	\$ 19,415,000	\$ 31,565,000	\$ 31,785,000	\$ 10,665,000	\$ 8,625,000	\$ 102,055,000

(1) Retention Gravity, Alameda and Solid Retention  
(1) MS Solid Retention and MS Solid Retention  
(1) Retention Retention by the City for MS Solid Retention

**LEHIGH COUNTY AUTHORITY  
SUBURBAN DIVISION  
2025-2029 CAPITAL PROGRAM  
WASTEWATER**

Project #	Name or Title of Proposal	Pri. Category	(1) Pri. Funding	Approval Stage (1)		This Capital Program						
					2024 Budget Approved	2025 Year 1	2026 Year 2	2027 Year 3	2028 Year 4	2029 Year 5	2025-2029 Total	
	Operating/Capital Reserve Funds											
	Annual											
SD:SA	Annual Operating	AM - Varies	LCA	A	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
	Subtotal				\$ 912,500	\$ 835,500	\$ 948,000	\$ 378,000	\$ 593,000	\$ 428,000	\$ 3,182,500	
	Pretreatment Plant											
SD:SP	Pre-treatment Enhancement	AM - Other	LCA	A	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Pre-treatment Enhancement/Construction	AM - Other	LCA	A	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Pre-treatment Enhancement/Construction and Roadway	AM - Other	LCA	A	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
	Subtotal				\$ 1,000,000	\$ 5,600,000	\$ 19,000,000	\$ 17,100,000	\$ 5,400,000	\$ 300,000	\$ 47,400,000	
	Western Lehigh Interceptor											
SD:SP	Conduit Leaking Convey to Collection System & Interceptor	Other Costs	LCA	S	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	LI Motor Replacement and Roadway	Roadway	LCA		\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Sanitary Collection Main Conduit Accession	AM - Other	LCA	S	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Sanitary Collection System Construction	AM - Other	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Sanitary Collection Main Roadway	Roadway	LCA	D	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Sanitary I & I Interceptor & Roadway Construction	Roadway	LCA		\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Other Collection Leaking Interceptor to System & Sanitary Main	Roadway	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Collection Leaking Interceptor Roadway Alignment (Sanitary Access Study)	Roadway	LCA	S	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
	Subtotal				\$ 6,000,000	\$ 4,250,000	\$ 350,000	\$ 1,000,000	\$ 1,000,000	\$ 400,000	\$ 7,000,000	
	Satellite Systems											
SD:SP	Interceptor I & I Interceptor & Roadway Construction	AM - Other	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Interceptor Construction Enhancement	Other Costs	LCA	D	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Arrested to Sanitary to Main Mainline Street	Sanitary	LCA	D	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Other Collection System Accessory Sanitary Collection System	Roadway	LCA	S	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Interceptor System I & I Interceptor & Roadway Construction	AM - Other	LCA	D	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Interceptor System to Main Roadway	AM - Other	LCA	S	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Sanitary to Sanitary to Main	Roadway	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Lynn Collection to Sanitary to Main	AM - High	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
SD:SP	Lynn Collection I & I Interceptor & Roadway Construction	Roadway	LCA		\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
	Subtotal				\$ 1,430,000	\$ 1,840,000	\$ 1,520,000	\$ 2,005,000	\$ 135,000	\$ 110,000	\$ 5,610,000	
Little Lehigh Relief Interceptor System												
SD:SP	Interceptor System Construction	AM - Other	LCA	C	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	\$ 0.000000	
Subtotal						\$ 2,300,000	\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ 800,000
	GRAND TOTAL WASTEWATER PROJECTS				\$ 11,642,500	\$ 13,325,500	\$ 21,818,000	\$ 20,483,000	\$ 7,128,000	\$ 1,238,000	\$ 63,992,500	

(1) Return Glory Arny & Friend d d d d d C n n n n n All r r r r r LCA n d d d

[illegible]