



LEHIGH COUNTY AUTHORITY
ALLENTOWN, PA

FINAL 5-YEAR CAPITAL PLAN

SUBURBAN DIVISION

2018-2022

APPROVED OCTOBER 23, 2017

**LEHIGH COUNTY AUTHORITY
5-YEAR CAPITAL PLAN
2018-2022**

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2018-2022 Capital Plan

Glossary of Acronyms & Terms

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

LCA Water and/or Wastewater Divisions/Systems

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

Project Type

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

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

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

Project Funding

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

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

Project Category

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

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

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

Approval Stage

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

WATER

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
WATER
5-YEAR CAPITAL PLAN
2018–2022**

CAPITAL FINANCING JUSTIFICATION

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

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

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

CAPITAL FINANCING SOURCES						
	2018	2019	2020	2021	2022	TOTAL
Project Costs	\$9,117,750	\$5,410,750	\$3,551,750	\$3,552,750	\$3,349,750	\$24,982,750
Sources of Funding:						
Operating Cash Available for Projects	\$333,000	\$132,000	\$2,172,000	-	-	\$2,637,000
Capital Reserves	\$8,784,750	\$5,278,750	\$1,379,750	-	\$602,500	\$16,045,750
New Borrowing	-	-	-	\$3,552,750	\$2,747,250	\$6,300,000
TOTAL FUNDING	\$9,117,750	\$5,410,750	\$3,551,750	\$3,552,750	\$3,349,750	\$24,982,750

Total spending on capital projects for the five year period totals \$24,982,750. Operating cash based upon a projection of revenues and costs over the period will make \$2,637,000 available for capital projects. There will be \$0 remaining from previous debt issuance for the projects leaving \$6,300,000 to be funded by New Borrowing.

This presents the most conservative view of capital financing, including 0% customer / revenue growth over the period and no rate increases to provide additional operating cash to fund the program. Actual borrowing requirements may be significantly reduced through a combination of modest customer growth that is expected to continue over the next five years and rate increases which will be evaluated in 2017 to determine adequacy to cover cash needs during this period.

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
2018-2022 CAPITAL PROGRAM
WATER**

Project #	Name or Title of Proposal	(1) Type	(1) Pri. Funding	Approval Stage (1)	Project Cost		This Capital Program					Project Category (1)		
					Total Cost	Prior Years' (3)	2018 Year -1	2019 Year -2	2020 Year -3	2021 Year -4	2022 Year -5	Grand Total	Primary	Secondary
	Annual													
SD-W-A	Annual Projects	Regular	LCA	A	\$ 8,535,750	\$ 730,000	\$ 1,878,750	\$ 1,822,750	\$ 1,401,750	\$ 1,452,750	\$ 1,249,750	\$ 7,805,750	AM - Varies	N/A
	Subtotal				\$ 8,535,750	\$ 730,000	\$ 1,878,750	\$ 1,822,750	\$ 1,401,750	\$ 1,452,750	\$ 1,249,750	\$ 7,805,750		
	Previously Authorized													
SD-W-12	Water Main Replacement Projects	Regular	LCA	C	\$ 10,500,000	\$ -	\$ 2,100,000	\$ 2,100,000	\$ 2,100,000	\$ 2,100,000	\$ 2,100,000	\$ 10,500,000	AM - Varies	N/A
SD-W-25	Pine Lakes Pumping Station Improvements	Regular	LCA	C	\$ 725,000	\$ 510,000	\$ 215,000	\$ -	\$ -	\$ -	\$ -	\$ 215,000	AM - High	Regulatory
SD-W-48	Crestwood - New Alternate Water Supply	Regular	LCA	C	\$ 510,000	\$ 330,000	\$ 180,000	\$ -	\$ -	\$ -	\$ -	\$ 180,000	Sys Imp	N/A
SD-W-49	CLD Auxiliary Pumping Station & Main Extension - Lower to Upper System	Regular	LCA	D	\$ 1,877,000	\$ 95,000	\$ 1,464,000	\$ 318,000	\$ -	\$ -	\$ -	\$ 1,782,000	Sys Imp	N/A
	Subtotal				\$ 13,612,000	\$ 935,000	\$ 3,959,000	\$ 2,418,000	\$ 2,100,000	\$ 2,100,000	\$ 2,100,000	\$ 12,677,000		
	Pending Authorization													
SD-W-4	Upper Milford Central Division Improvements - Buss Acres	Regular	LCA	P	\$ 1,370,000	\$ -	\$ 500,000	\$ 870,000	\$ -	\$ -	\$ -	\$ 1,370,000	AM - High	Regulatory
SD-W-7	Well Abandonments	Regular	LCA	P	\$ 150,000	\$ 60,000	\$ 40,000	\$ 50,000	\$ -	\$ -	\$ -	\$ 90,000	Regulatory	N/A
SD-W-13	Arcadia West Division Total Dissolved Solids (TDS) Removal System	Regular	LCA	P	\$ 280,000	\$ -	\$ 80,000	\$ 200,000	\$ -	\$ -	\$ -	\$ 280,000	Sys Imp	Regulatory
SD-W-37	Additional (Redunant) Water Supply - Small Satellite Divisions	Regular	LCA	P	\$ 300,000	\$ -	\$ 200,000	\$ 50,000	\$ 50,000	\$ -	\$ -	\$ 300,000	Sys Imp	N/A
SD-W-53	Water Meter Replacement Project	Regular	LCA	P	\$ 1,640,000	\$ 500,000	\$ 1,140,000	\$ -	\$ -	\$ -	\$ -	\$ 1,140,000	AM - Med	Efficiency
SD-W-54	Central Lehigh to Upper Milford Division Interconnection	Regular	Fees & LCA	P	\$ 1,485,000	\$ 165,000	\$ 1,320,000	\$ -	\$ -	\$ -	\$ -	\$ 1,320,000	New Cust	Sys Imp
	Subtotal				\$ 5,225,000	\$ 725,000	\$ 3,280,000	\$ 1,170,000	\$ 50,000	\$ -	\$ -	\$ 4,500,000		
	GRAND TOTAL				\$ 27,372,750	\$ 2,390,000	\$ 9,117,750	\$ 5,410,750	\$ 3,551,750	\$ 3,552,750	\$ 3,349,750	\$ 24,982,750		

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents

(2) Includes estimate of expenditures through 2017.

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

Project Name	ANNUAL PROJECTS						
Budget Area	Water	Department	Capital Works	Date	9/19/2017	Project No.	SD-W-A
Location	All LCA Suburban Divisions, Multiple Municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	N/A	Preparer		PMD

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

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

Detailed Project Description
This is an annual project that has been previously listed as separate projects. This new annual project includes the following: New Water Main Installation, Distribution Mains - Development & Service Connections, Distribution Mains - Upsizing/Contribution, Reservoir Rehabilitation/Maintenance, Water Company Acquisitions, Main Office/Operations Center Improvements, Mobile Equipment, Other Equipment, General Water System Improvements and Water Facility Condition Assessments & Improvements Implementation.

Purpose and Needs to be Met by the Project
Annual items that help maintain the operation of water facilities in the Suburban Division.

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

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 1,392,250
Land Acquisition	
Construction/Equipment	\$ 5,283,000
Professional Services	\$ 963,500
Other	\$ 687,000
Contingencies	\$ 210,000
Total Project Cost	\$ 8,535,750

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

Requested in this Capital Program	\$ 7,805,750
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	
Prior Years		\$ 730,000				
1st Year	2018	\$ 1,878,750				\$ 1,878,750
2nd Year	2019	\$ 1,822,750				\$ 1,822,750
3rd Year	2020	\$ 1,401,750				\$ 1,401,750
4th Year	2021	\$ 1,452,750				\$ 1,452,750
5th Year	2022	\$ 1,249,750				\$ 1,249,750

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

Project Name	UPPER MILFORD CENTRAL DIVISION (UMCD) IMPROVEMENTS - BUSS ACRES						
Budget Area	Water	Department	Capital Works	Date	7/7/2017	Project No.	SD-W-4
Location	Upper Milford Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Regulatory	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	Varies*	Comments
Approx. No. of Customers Benefitted	100	*Varies by components: (1) This system should be put on Common Rates.
Is this System part of a Common User Rate?	No (1)	
Will the Project Require Obtaining Land Rights	TBD	

Detailed Project Description
The project includes the replacement of two existing aged problematic hydro-pneumatic operated well stations in need of mechanical, structural, HVAC and electrical repairs. The pressurized 6,000 gallon water storage tanks at both facilities have exceeded their useful life and are not in compliance with regulatory requirements for pressure vessels. The project involves the consolidation of both stations on the largest existing well station parcel with a single new well/pump station and a new, larger water storage tank. The new station will be a variable frequency drive-controlled double pumping system with full SCADA telemetry/control with the option to provide fire protection to customers in UMCD (currently there is no fire protection provided). In addition, given the water supply has a high level of radon (currently there is no regulatory limit), design provisions will be incorporated to facilitate the future addition of radon mitigation equipment conditioned on the establishment of a regulatory limit.

Purpose and Needs to be Met by the Project
The Project will improve the level of service, reduce the risk of failure and provide regulatory compliance with the option to add fire protection to the customers of the UMCD. Additionally, the design will accommodate the future addition of radon mitigation equipment if a regulatory radon limit is established.

Project Status - Describe what work, if any has been completed or underway for this project
Radon Evaluation and Mitigation Study done in April 2013. Asset Evaluation Study done in 2016.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Electrical power costs will increase because of the conversion from the hydro-pneumatic to a double pumping system. If radon mitigation equipment is installed in the future, operating costs will increase again because of added electrical power needs and maintenance.

Project No.	SD-W-4
Project Name	UPPER MILFORD CENTRAL DIVISION (UMCD) IMPROVEMENTS - BUSS ACRES

Estimated Project Costs :	
LCA Staff	\$ 60,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,000,000
Professional Services	\$ 200,000
Other	\$ 10,000
Contingencies	\$ 100,000
Total Project Cost	\$ 1,370,000

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

Requested in this Capital Program	\$ 1,370,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ -				
1st Year 2018	\$ 500,000				\$ 500,000
2nd Year 2019	\$ 870,000				\$ 870,000
3rd Year 2020	\$ -				
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	WELL ABANDONMENTS						
Budget Area	Water	Department	Capital Works	Date	9/19/2017	Project No.	SD-W-7
Location	CLD, NWD, PLD & CFD, located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	N/A	Preparer		ALK

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

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

Detailed Project Description
Full abandonment of wells in various water systems which are no longer used because of water quality or quantity issues. Abandonments will be in accordance with AWWA & PADEP requirements. 2019 - Funding for the abandonment of two additional wells (to be determined).

Purpose and Needs to be Met by the Project
Pending PADEP regulations require that groundwater sources can no longer be classified as reserve or emergency and must be either used or removed from the water supply permit. Proper well abandonment procedures will protect against contamination of the aquifer.

Project Status - Describe what work, if any has been completed or underway for this project
Wells 4 and 7 in the Central Lehigh Division and Wells 7, 8, 9, and 10 in the North Whitehall Division are scheduled for abandonment in 2017.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-7
Project Name	WELL ABANDONMENTS

Estimated Project Costs :	
LCA Staff	\$ 25,000
Land Acquisition	\$ -
Construction/Equipment	\$ 80,000
Professional Services	\$ 30,000
Other	\$ 5,000
Contingencies	\$ 10,000
Total Project Cost	\$ 150,000

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

Requested in this Capital Program	\$ 90,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 60,000				
1st Year	2018	\$ 40,000				\$ 40,000
2nd Year	2019	\$ 50,000				\$ 50,000
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	WATER MAIN REPLACEMENT PROJECTS						
Budget Area	Water	Department	Capital Works	Date	7/17/2017	Project No.	SD-W-12
Location	Various LCA Divisions located in multiple municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	N/A	Preparer		JMP

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

Additional Information		
Expected Useful Life (Years)	100	Comments Varies by system - Main Replacements are located in multiple systems.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
Replacement of cast iron (CI) mains in water systems that may experience high failure rates. Year 1 of the Capital Plan (CP) (2017) will replace the remaining one-mile of mains that to date have experienced a high rate of failure approximately. Annual funding is provided on an as-needed basis for subsequent years in the CP in the event that additional mains start to occur at high failure rates, thereby justifying replacement.

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

Project Status - Describe what work, if any has been completed or underway for this project
The construction of Cycles 1 & 2 main replacements (2.85 miles) is currently underway and will be completed by the end of 2016. Additionally, the design for Cycle-3 that will be constructed in 2017 (1-mile) is underway.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Replacement of aged cast iron mains will reduce the number of main breaks, thereby saving repair costs and reducing the possibility of ground subsidence and property damage.

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

Estimated Project Costs :	
LCA Staff	\$ 500,000
Land Acquisition	\$ -
Construction/Equipment	\$ 7,600,000
Professional Services	\$ 1,200,000
Other	\$ 500,000
Contingencies	\$ 700,000
Total Project Cost	\$ 10,500,000

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

Requested in this Capital Program	\$ 10,500,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 2,100,000				\$ 2,100,000
2nd Year	2019	\$ 2,100,000				\$ 2,100,000
3rd Year	2020	\$ 2,100,000				\$ 2,100,000
4th Year	2021	\$ 2,100,000				\$ 2,100,000
5th Year	2022	\$ 2,100,000				\$ 2,100,000

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

Project Name	ARCADIA WEST DIVISON TOTAL DISSOLVED SOLIDS (TDS) REMOVAL SYSTEM						
Budget Area	Water	Department	Capital Works	Date	6/29/2017	Project No.	SD-W-13
Location	AWD - Weisenberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Regulatory	Preparer		ALK

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

Additional Information		
Expected Useful Life (Years)	20	Comments Serves Arcadia West Industrial Park, West Hills Business Center, NW Lehigh SD Elementary School and others along RT 863.
Approx. No. of Customers Benefitted	20	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
Currently in the Arcadia West Division, the levels of TDS in the well water supply exceed the PADEP 500 mg/l secondary Maximum Contaminate Level (MCL). A study was begun in 2016 to determine the source of TDS in the water supply. One possible source is the effluent discharge of the Arcadia Wastewater Treatment Plant. This project includes relocating the discharge point of the effluent away from the well locations.

Purpose and Needs to be Met by the Project
Improvements are necessary to guarantee water quality. The reduction of TDS will bring the water supply into compliance with the PADEP secondary MCL.

Project Status - Describe what work, if any has been completed or underway for this project
TDS Study for the water supply will be complete by the end of 2017.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-13
Project Name	ARCADIA WEST DIVISON TOTAL DISSOLVED SOLIDS (TDS) REMOVAL SYSTEM

Estimated Project Costs :	
LCA Staff	\$ 40,000
Land Acquisition	\$ 5,000
Construction/Equipment	\$ 150,000
Professional Services	\$ 55,000
Other	\$ 5,000
Contingencies	\$ 25,000
Total Project Cost	\$ 280,000

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

Requested in this Capital Program	\$ 280,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 80,000				\$ 80,000
2nd Year	2019	\$ 200,000				\$ 200,000
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	PINE LAKES PUMPING STATION IMPROVEMENTS						
Budget Area	Water	Department	Capital Works	Date	9/19/2017	Project No.	SD-W-25
Location	Pine Lakes Division, Lynn Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Regulatory	Preparer		ALK

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

Additional Information		
Expected Useful Life (Years)	20	Comments
Approx. No. of Customers Benefitted	60	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The Project includes the equipment necessary to convert the hydro-pneumatic operated facility to a variable frequency drive-controlled double pumping system with full SCADA telemetry/control. The project also includes the installation of a new 10,000 gallon underground storage tank and chlorine contact infrastructure to comply with the PADEP Ground Water (<i>disinfection</i>) Rule.

Purpose and Needs to be Met by the Project
Currently, Pine Lakes Division is an aged and problematic hydro-pneumatic system. Additionally, the existing pressure tank has exceeded its useful life and is not compliant with regulatory requirements for pressure vessels.

Project Status - Describe what work, if any has been completed or underway for this project
Design is complete and bids have been received. Construction will begin in August 2017 and extend into 2018.

Annual Cost Impact	
Operating - Increase/(Decrease)	\$ 4,000
Debt Service	\$ -
Net	\$ 4,000

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Increase in operating costs reflects additional electric power costs associated with converting to a double pumping system.

Project No.	SD-W-25
Project Name	PINE LAKES PUMPING STATION IMPROVEMENTS

Estimated Project Costs :	
LCA Staff	\$ 90,000
Land Acquisition	\$ -
Construction/Equipment	\$ 448,000
Professional Services	\$ 137,000
Other	\$ 10,000
Contingencies	\$ 40,000
Total Project Cost	\$ 725,000

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

Requested in this Capital Program	\$ 215,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid
Prior Years		\$ 510,000			
1st Year	2018	\$ 215,000			\$ 215,000
2nd Year	2019	\$ -			
3rd Year	2020	\$ -			
4th Year	2021	\$ -			
5th Year	2022	\$ -			

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

Project Name	ADDITIONAL (REDUNDANT) WATER SUPPLY - SMALL SATELLITE DIVISIONS						
Budget Area	Water	Department	Capital Works	Date	7/17/2017	Project No.	SD-W-37
Location	MND, CFD, MCD, located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	N/A	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	>20	Comments *Varies by division: (1) Madison Park Division (MND) is not part of the common rate, but should be.
Approx. No. of Customers Benefitted	*	
Is this System part of a Common User Rate?	(1)	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
This Project addresses the needs of three satellite water systems that currently are operating on one well and have no redundant water supply. The Madison Park system has only one well, and an additional well will be developed and constructed. The Clear View Farms and Mill Creek systems have one operating well each, but have at least one other existing well that has water supply or quality issues and cannot be presently utilized. In this case, the wells will be evaluated and if practicable, rehabilitated to improve capacity and/or water quality. Alternately, new wells will be developed and constructed for these sites. All these systems were acquired from developers or homeowners associations.

Purpose and Needs to be Met by the Project
The consequence of failure for the single wells serving these satellite systems is significant as water storage for these systems is approximately equal to one average day demand. Regulations for new public water systems require a backup or redundant source of supply.

Project Status - Describe what work, if any has been completed or underway for this project
The property owner for the Madison Park North well development has been contacted to initiate the easment acquisition process.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-37
Project Name	ADDITIONAL (REDUNDANT) WATER SUPPLY - SMALL SATELLITE DIVISIONS

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ 50,000
Construction/Equipment	\$ 100,000
Professional Services	\$ 70,000
Other	\$ -
Contingencies	\$ 30,000
Total Project Cost	\$ 300,000

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

Requested in this Capital Program	\$ 300,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 200,000				\$ 200,000
2nd Year	2019	\$ 50,000				\$ 50,000
3rd Year	2020	\$ 50,000				\$ 50,000
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	CRESTWOOD - NEW ALTERNATE WATER SUPPLY						
Budget Area	Water	Department	Capital Works	Date	6/29/2017	Project No.	SD-W-48
Location	NWD, North Whitehall Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	N/A	Preparer		ALK

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

Additional Information		
Expected Useful Life (Years)	100	Comments
Approx. No. of Customers Benefitted	96	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
<p>The Project consists of approximately 600 LF of 6-inch diameter water main that will connect to the primary NWD system at the intersection of RT 873 & Crestwood Dr and extend along Crestwood Dr to the LCA well station to supply three (3) new booster pumps. The two (2) existing wells and storage tank will be abandoned. SCADA telemetry/control are included in the project.</p> <p>Note: The Crestwood service elevation is located within the NWD and serves approximately 96 customers at a higher pressure than the primary NWD service elevation.</p>

Purpose and Needs to be Met by the Project
<p>During prolonged periods of hot weather, there is inadequate supply to meet high volume lawn watering and water restrictions must be implemented. In addition, the current wells have a high manganese content which requires frequent system flushing. At times, the manganese clogs meters and service lines and is the cause for many customer complaints. As such, the Project will provide a higher quality water source, assure adequate capacity to meet extremely high demand periods and provide higher customer satisfaction.</p>

Project Status - Describe what work, if any has been completed or underway for this project
<p>Design is complete and bids have been received. Construction is anticipated to begin in the fall of 2017 and extend into 2018.</p>

Annual Cost Impact	
Operating - Increase/(Decrease)	\$ 4,000
Debt Service	\$ -
Net	\$ 4,000

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-48
Project Name	CRESTWOOD - NEW ALTERNATE WATER SUPPLY

Estimated Project Costs :	
LCA Staff	\$ 80,000
Land Acquisition	\$ -
Construction/Equipment	\$ 270,000
Professional Services	\$ 120,000
Other	\$ 10,000
Contingencies	\$ 30,000
Total Project Cost	\$ 510,000

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

Requested in this Capital Program	\$ 180,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 330,000				
1st Year 2018	\$ 180,000				\$ 180,000
2nd Year 2019	\$ -				
3rd Year 2020	\$ -				
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	CLD AUXILIARY PUMPING STATION & MAIN EXTENSION - LOWER TO UPPER SYSTEM						
Budget Area	Water	Department	Capital Works	Date	6/22/2017	Project No.	SD-W-49
Location	CLD			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	N/A	Preparer		EH

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

Additional Information		
Expected Useful Life (Years)	35	Comments
Approx. No. of Customers Benefitted	2,400	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
The project consists of a 3-pump 2 MGD water booster pumping station with generator and high service pump, and approximately 1,600 linear-feet of 12-inch diameter main extending from the intersection of Cetronia Road and Werley Road north along Werley Road and connecting to the existing main in Laurel Field in Upper Macungie Township. It is envisioned that the pumping station will be located on a small permanent easement yet to be obtained. SCADA will be included in the project.

Purpose and Needs to be Met by the Project
The CLD system is divided into two primary gravity service elevations: the Upper System (US) and the Lower System (LS). Currently water can be transferred down from the US to the LS, but there are no facilities that can pump water from the LS to the US. The proposed auxiliary pumping station will provide added reliability and a higher level of service to the US. In addition, it will provide flexibility for utilizing water purchased from the City of Allentown.

Project Status - Describe what work, if any has been completed or underway for this project
JMT is preparing the public water supply permit application for submission to DEP. They have prepared a description of the proposed pump station easement which must be obtained.

Annual Cost Impact	
Operating - Increase/(Decrease)	\$ 8,460
Debt Service	\$ -
Net	\$ 8,460

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Estimated 75 hours per year for routine station checks and station maintenance. Estimated \$930 per year for outside maintenance of the generator and other equipment. Assumed that annual power costs will be \$2,740.

Project No.	SD-W-49
Project Name	CLD AUXILIARY PUMPING STATION & MAIN EXTENSION - LOWER TO UPPER SYSTEM

Estimated Project Costs :	
LCA Staff	\$ 135,000
Land Acquisition	\$ 36,000
Construction/Equipment	\$ 1,242,000
Professional Services	\$ 193,000
Other	\$ 26,000
Contingencies	\$ 245,000
Total Project Cost	\$ 1,877,000

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

Requested in this Capital Program	\$ 1,782,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 95,000				
1st Year	2018	\$ 1,464,000				\$ 1,464,000
2nd Year	2019	\$ 318,000				\$ 318,000
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	WATER METER REPLACEMENT PROJECT						
Budget Area	Water	Department	Capital Works	Date	6/29/2017	Project No.	SD-W-53
Location	All Suburban Divisions, located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Med	Secondary	Efficiency	Preparer		ALK

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

Additional Information		
Expected Useful Life (Years)	20	Comments
Approx. No. of Customers Benefitted	3,135	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The Project includes the replacement of ~670 (2" and smaller) and 45 (3" and larger) non-residential water meters, 1,600 residential meters and 820 non-working transceiver units that have reached the end of their useful lives. These new meters have a low flow accuracy more than four-times greater than the existing older meters and accurately cover a wider range of flow. Additionally, all new meters will have radio-read (RR) capability rather than the manual read capabilities of approximately 75 of the older meters.

Purpose and Needs to be Met by the Project
The accuracy of the new meters should have the potential to increase user revenues. Secondly, RR technology will increase meter reading accuracy and efficiency that will allow operators to focus efforts in more technical areas.

Project Status - Describe what work, if any has been completed or underway for this project
Bids for construction are expected to be received in August of 2017 with construction extending into 2018.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

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

Project No.	SD-W-53
Project Name	WATER METER REPLACEMENT PROJECT

Estimated Project Costs :	
LCA Staff	\$ 65,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,465,000
Professional Services	\$ 30,000
Other	\$ 5,000
Contingencies	\$ 75,000
Total Project Cost	\$ 1,640,000

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

Requested in this Capital Program	\$ 1,140,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 500,000				
1st Year	2018	\$ 1,140,000				\$ 1,140,000
2nd Year	2019	\$ -				
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	CENTRAL LEHIGH TO UPPER MILFORD DIVISION INTERCONNECTION						
Budget Area	Water	Department	Capital Works	Date	6/23/2017	Project No.	SD-W-54
Location	CLD, Lower Macungie & Upper Milford Townships			Prj. Type	Regular	Prj. Funding	Fees & LCA
Prj. Category	Primary	New Cust	Secondary	Sys Imp	Preparer		EH

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

Additional Information		
Expected Useful Life (Years)	35	Comments Includes 72 existing customers in Mink Estates and Far View Farms plus 125 new customers in the Kohler Tract.
Approx. No. of Customers Benefitted	197	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
The project consists of a 3-pump 0.5 MGD water booster pumping station with generator and high service pump. A 12-inch diameter main will be constructed by the developer to interconnect the pump station and the Kohler Tract. The pumping station will be located on a small permanent easement yet to be obtained. SCADA will be included in the project.

Purpose and Needs to be Met by the Project
The proposed pumping station will provide service to the Kohler Tract as well as a higher level of service to existing customers in Mink Estates and Far View Farms. An additional 80 customers in the Emmaus Consecutive System that abut the Kohler Tract could be supplied if deemed beneficial.

Project Status - Describe what work, if any has been completed or underway for this project
JMT is preparing the public water supply permit application for submission to DEP. Negotiations are under way to obtain the pump station and offsite water line easements.

Annual Cost Impact	
Operating - Increase/(Decrease)	\$ 7,500
Debt Service	\$ -
Net	\$ 7,500

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-W-54
Project Name	CENTRAL LEHIGH TO UPPER MILFORD DIVISION INTERCONNECTION

Estimated Project Costs :	
LCA Staff	\$ 85,000
Land Acquisition	\$ 30,000
Construction/Equipment	\$ 990,000
Professional Services	\$ 161,000
Other	\$ 25,000
Contingencies	\$ 194,000
Total Project Cost	\$ 1,485,000

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

Requested in this Capital Program	\$ 1,320,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, (1) Contr.-in-Aid
Prior Years		\$ 165,000			
1st Year	2018	\$ 1,320,000			\$ 1,320,000
2nd Year	2019	\$ -			
3rd Year	2020	\$ -			
4th Year	2021	\$ -			
5th Year	2022	\$ -			

(1) Developers contribution applicable to the 125 homes in the proposed Kohler Tract subdivision.

WASTEWATER

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
WASTEWATER
5-YEAR CAPITAL PLAN
2018–2022**

CAPITAL FINANCING JUSTIFICATION

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

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

CAPITAL FINANCING SOURCES						
	2018	2019	2020	2021	2022	TOTAL
Project Costs	\$11,598,750	\$7,253,750	\$10,845,750	\$8,309,750	\$1,953,750	\$39,961,750
<i>Sources of Funding:</i>						
Operating Cash Available for Projects	\$594,000	\$6,116,000	\$826,000	\$7,107,000	\$716,000	\$15,359,000
Capital Reserves	\$11,004,750	\$1,137,750	\$1,169,750	\$1,202,750	\$1,237,750	\$15,752,750
New Borrowing	-	-	\$8,850,000	-	-	\$8,850,000
TOTAL FUNDING	\$11,598,750	\$7,253,750	\$10,845,750	\$8,309,750	\$1,953,750	\$39,961,750

Total project spending will amount to \$39,961,750. Ongoing revenues are expected to finance the ongoing capital improvements for projects associated with the LCA Wastewater Treatment Plant (SD-S-22). Annual revenues for this facility are generated from the treatment of the Boston Beer, Hilton Homewood Suites and trucked-in hauler waste as well as removal credits from treatment of all sewer flows upstream of the pretreatment plant.

New borrowing is planned in 2020 for \$6,000,000 for Phase 1 Administrative Order (AO) work. Debt Service for all AO projects will be reimbursed directly from the municipal signatories served by the Western Lehigh Interceptor and Little Lehigh Relief Interceptor via the terms of the intermunicipal service agreements.

This plan also assumes an additional \$2,850,000 will be borrowed for the other non-AO project work. However, these non-AO projects serve a very small customer base of about 2,500 homes and businesses, and affordability of each project will need to be assessed prior to authorization and borrowing.

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

BY SYSTEM	PROJECTS	TOTAL	OPERATING RESERVES	CAPITAL RESERVES	NEW DEBT
Annual Projects	SA	\$2,146,750	\$2,146,750	-	-
Western Lehigh Interceptor	S2, S3, S4, S24, S27, S28	\$17,392,000	-	\$8,542,000	\$8,850,000
LCA Wastewater Treatment Plant	S22	\$4,000,000	\$4,000,000	-	-
Common Rate Collector Systems	S6, S7, S13, S18, S19	\$3,820,000	\$3,820,000	-	-
Arcadia West	S8, S17	\$705,000	\$705,000	-	-
Lynn Township	S25, S26	\$4,758,000	\$4,687,250	\$70,750	-
Little Lehigh Relief Interceptor System	S12, S15, S16	\$7,140,000	-	\$7,140,000	-
	TOTAL	\$39,961,750	\$15,359,000	\$15,752,750	\$8,850,000

**LEHIGH COUNTY AUTHORITY
SUBURBAN DIVISION
2018-2022 CAPITAL PROGRAM
WASTEWATER**

Project #	Name or Title of Proposal	(1) Pri. Type	(1) Pri. Funding	Approval Stage (1)	Project Cost		This Capital Program					Project Category (1)		
					Total Cost	Prior Years' (2)	2018 Year -1	2019 Year -2	2020 Year -3	2021 Year -4	2022 Year -5	Grand Total	Primary	Secondary
Annual														
SD-S-A	Annual Projects	Regular	LCA	A	\$ 2,671,750	\$ 525,000	\$ 865,750	\$ 304,750	\$ 478,750	\$ 263,750	\$ 233,750	\$ 2,146,750	AM - Varies	N/A
SD-S-22	Pretreatment Plant Improvements	Regular	LCA	A	\$ 4,000,000	\$ -	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 4,000,000	AM - Varies	Sys Imp
	Subtotal				\$ 6,671,750	\$ 525,000	\$ 1,665,750	\$ 1,104,750	\$ 1,278,750	\$ 1,063,750	\$ 1,033,750	\$ 6,146,750		
Previously Authorized														
SD-S-3	Central Lehigh County WW Capacity Planning & Expansion	Regular	LCA	V	\$ 1,715,000	\$ 1,100,000	\$ 315,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 615,000	New Cust	N/A
SD-S-4	Spring Creek Force Main Air/Vacuum Valve Replacements	Regular	LCA	V	\$ 180,000	\$ 10,000	\$ 170,000	\$ -	\$ -	\$ -	\$ -	\$ 170,000	Sys Imp	N/A
SD-S-6	Wynnewood I & I Investigation & Remediation Program	Regular	LCA	V	\$ 500,000	\$ 250,000	\$ 20,000	\$ 230,000	\$ -	\$ -	\$ -	\$ 250,000	AM - Varies	Regulatory
SD-S-7	Wynnewood Terrace WWTP Remediation & Replacement	Regular	LCA	V	\$ 1,510,000	\$ 110,000	\$ 1,000,000	\$ 400,000	\$ -	\$ -	\$ -	\$ 1,400,000	AM - High	N/A
SD-S-13	Sand Spring WWTP Remediation & Replacement	Regular	LCA	S	\$ 1,510,000	\$ 110,000	\$ 800,000	\$ 600,000	\$ -	\$ -	\$ -	\$ 1,400,000	AM - High	N/A
SD-S-15	Park Pump Station Rehabilitation/Improvements	AO	LCA	P	\$ 4,760,000	\$ 300,000	\$ 3,000,000	\$ 1,400,000	\$ 60,000	\$ -	\$ -	\$ 4,460,000	AM - High	Regulatory
SD-S-17	Heidelberg Heights I & I Investigation & Remediation Program	Regular	LCA	V	\$ 390,000	\$ 25,000	\$ 200,000	\$ 140,000	\$ 25,000	\$ -	\$ -	\$ 365,000	AM - Varies	Regulatory
SD-S-18	Heidelberg Heights WWTP Rehabilitation	Regular	LCA	P	\$ 505,000	\$ 75,000	\$ 30,000	\$ 50,000	\$ 300,000	\$ 25,000	\$ 25,000	\$ 430,000	AM - High	N/A
SD-S-24	Signatory I & I Investigation & Remediation Program	AO	LCA	V	\$ 8,255,000	\$ 4,500,000	\$ 1,585,000	\$ 1,300,000	\$ 470,000	\$ 200,000	\$ 200,000	\$ 3,755,000	Regulatory	Sys Imp
SD-S-25	Lynn Township WWTP Upgrades & Expansion	Regular	LCA	D-Partial	\$ 5,083,755	\$ 615,755	\$ 606,000	\$ 89,000	\$ 1,887,000	\$ 1,886,000	\$ -	\$ 4,468,000	AM - High	N/A
SD-S-26	Lynn Township I & I Investigation & Remediation Program	Regular	LCA	P	\$ 320,000	\$ 30,000	\$ 125,000	\$ 125,000	\$ 40,000	\$ -	\$ -	\$ 290,000	AM - High	Regulatory
SD-S-27	Spring Creek Pump Station Upgrades	AO	LCA	D	\$ 581,000	\$ 359,000	\$ 222,000	\$ -	\$ -	\$ -	\$ -	\$ 222,000	Sys Imp	Efficiency
	Subtotal				\$ 25,309,755	\$ 7,484,755	\$ 8,073,000	\$ 4,409,000	\$ 2,857,000	\$ 2,186,000	\$ 300,000	\$ 17,825,000		
Pending Authorization														
SD-S-2	Interceptor Access Easement Acquisitions	Regular	LCA	P	\$ 330,000	\$ -	\$ 60,000	\$ 100,000	\$ 100,000	\$ 50,000	\$ 20,000	\$ 330,000	Efficiency	Sys Imp
SD-S-8	Western Weisenberg WWTP Mechanical Screen	Regular	LCA	P	\$ 340,000	\$ -	\$ -	\$ 40,000	\$ 300,000	\$ -	\$ -	\$ 340,000	Efficiency	N/A
SD-S-12	Park Pump Station Force Main Rehabilitation	AO	LCA	P	\$ 2,550,000	\$ 50,000	\$ 1,500,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ 2,500,000	AM - High	N/A
SD-S-16	Park Pump Station - Sister Station	AO	LCA	P	\$ 180,000	\$ -	\$ -	\$ 60,000	\$ 10,000	\$ 10,000	\$ 100,000	\$ 180,000	Regulatory	AM - High
SD-S-19	Heidelberg Heights WWTP Mechanical Screen	Regular	LCA	P	\$ 340,000	\$ -	\$ -	\$ 40,000	\$ 300,000	\$ -	\$ -	\$ 340,000	Efficiency	N/A
SD-S-28	WLI - Trexlertown Area Interceptor Upgrade	AO	LCA	P	\$ 12,300,000	\$ -	\$ 300,000	\$ 500,000	\$ 6,000,000	\$ 5,000,000	\$ 500,000	\$ 12,300,000	Regulatory	Sys Imp
	Subtotal				\$ 16,040,000	\$ 50,000	\$ 1,860,000	\$ 1,740,000	\$ 6,710,000	\$ 5,060,000	\$ 620,000	\$ 15,990,000		
	GRAND TOTAL				\$ 48,021,505	\$ 8,059,755	\$ 11,598,750	\$ 7,253,750	\$ 10,845,750	\$ 8,309,750	\$ 1,953,750	\$ 39,961,750		

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents

(2) Includes estimate of expenditures through 2017.

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

Project Name	ANNUAL PROJECTS						
Budget Area	Wastewater	Department	Capital Works	Date	7/20/2017	Project No.	SD-S-A
Location	LCA WLI facilities located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	N/A	Preparer		PMD

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

Additional Information		
Expected Useful Life (Years)	N/A	Comments 7 LCA WL signatories.
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This is an annual project that has been previously listed as separate projects. This new annual project includes the following: Mobile Equipment, Sewer Company Acquisitions, Other Equipment and Wastewater Facility Condition Assessments & Improvement Implementation.

Purpose and Needs to be Met by the Project
Annual items that help maintain the operation of various wastewater facilities in the Suburban Division.

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

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 101,250
Land Acquisition	\$ -
Construction/Equipment	\$ 2,153,000
Professional Services	\$ 165,000
Other	\$ 202,500
Contingencies	\$ 50,000
Total Project Cost	\$ 2,671,750

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

Requested in this Capital Program	\$ 2,146,750
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 525,000				
1st Year	2018	\$ 865,750				\$ 865,750
2nd Year	2019	\$ 304,750				\$ 304,750
3rd Year	2020	\$ 478,750				\$ 478,750
4th Year	2021	\$ 263,750				\$ 263,750
5th Year	2022	\$ 233,750				\$ 233,750

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

Project Name	INTERCEPTOR ACCESS EASEMENT ACQUISITIONS						
Budget Area	Wastewater	Department	Capital Works	Date	7/17/2017	Project No.	SD-S-2
Location	LCA WLI facilities located in various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	Sys Imp	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	N/A	Comments 7 LCA WL signatories
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
Acquire access easements extending from roads across private property to our existing interceptor easements in numerous locations along the Western Lehigh Interceptor. Approximately 12,200 linear feet of easements have been initially identified, where the typical easement width is 20-feet. 2018 money is budgeted for a consultant to perform survey work and easment delineation.

Purpose and Needs to be Met by the Project
Access to the existing interceptor has become limited due to development, changes in stream flow patterns, as well as regulatory restrictions. Acquisition of these "access" easements will provide legal access to the interceptor system, facilitating operation, maintenance and timely response to emergencies.

Project Status - Describe what work, if any has been completed or underway for this project
Conceptual in-house identification of preferred easement locations.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-2
Project Name	INTERCEPTOR ACCESS EASEMENT ACQUISITIONS

Estimated Project Costs :	
LCA Staff	\$ 30,000
Land Acquisition	\$ 200,000
Construction/Equipment	\$ -
Professional Services	\$ 60,000
Other	\$ -
Contingencies	\$ 40,000
Total Project Cost	\$ 330,000

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

Requested in this Capital Program	\$ 330,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 60,000				\$ 60,000
2nd Year	2019	\$ 100,000				\$ 100,000
3rd Year	2020	\$ 100,000				\$ 100,000
4th Year	2021	\$ 50,000				\$ 50,000
5th Year	2022	\$ 20,000				\$ 20,000

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

Project Name	CENTRAL LEHIGH COUNTY WASTEWATER CAPACITY PLANNING & EXPANSION						
Budget Area	Wastewater	Department	Capital Works	Date	6/29/2017	Project No.	SD-S-3
Location	Western Lehigh LCA Service Area tributary to the AD WWTP			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	New Cust	Secondary	N/A	Preparer		PLM

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

Additional Information		
Expected Useful Life (Years)	35	Comments
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description

Scope involves planning for additional treatment capacity for WLI service area and construction of selected alternative. This project is needed for future wastewater treatment capacity and covers either expanding the Kline's Island Wastewater Treatment Plant (KIWWTP) from 40 to 44 MGD or converting the pretreatment plant to a full treatment facility, which includes discharge pumping and piping. This project includes planning, design and construction. Cost estimates are based on the 2011 Malcolm Pirnie report "Updated Cost Summary for Wastewater Capacity". The costs were updated to reflect new DRBC and DEP requirements. Completion of the Act 537 Plan and construction of the yet to be selected option is assumed to be after this 5-year Capital Planning period. Funding shown is so that monies are available if the Act 537 work resumes during this Capital Plan period.

Purpose and Needs to be Met by the Project

The City's Kline's Island WWTP does not currently have enough available wastewater treatment allocation to meet LCA's future needs. To meet wastewater treatment needs, the best available options must be investigated. Although some recovery of capacity will occur through inflow and infiltration removal, there is no wastewater allocation remaining for sale. Updating the 537 Plan is the primary cost factor for planning. Capital costs will be recovered through a combination of increased user fees and capital recovery fees to new customers.

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

ARRO, Inc. was retained to prepare the Act 537 Plan to evaluate the alternatives for an additional 4 MGD of wastewater treatment capacity. The project was put on hold by DEP. In 2018, several studies will be conducted related to the PTP design capacity and future growth. The first is the PTP Influent Residential and Industrial Flow Segregation Evaluation Project to determine if segregation of wastes is a viable option to processing wastes when the PTP reaches capacity. The second project is the conceptual design and will include an alignment evaluation for the segregation and a PTP expansion conceptual feasibility study.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 1,150,000
Land Acquisition	\$ -
Construction/Equipment	\$ 66,130,000
Professional Services	\$ 13,230,000
Other	\$ -
Contingencies	\$ -
Total Project Cost	\$ 80,510,000

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

Requested in this Capital Program	\$ 615,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 1,100,000				
1st Year	2018	\$ 315,000				\$ 315,000
2nd Year	2019	\$ 75,000				\$ 75,000
3rd Year	2020	\$ 75,000				\$ 75,000
4th Year	2021	\$ 75,000				\$ 75,000
5th Year	2022	\$ 75,000				\$ 75,000

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

Project Name	SPRING CREEK FORCEMAIN AIR/VACUUM VALVE REPLACEMENTS						
Budget Area	Wastewater	Department	Operations	Date	7/7/2017	Project No.	SD-S-4
Location	WLI, various municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	N/A	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	20	Comments **= The Spring Creek Pump Station & Force Main provides service to 7 WL signatories.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
Replacement of inoperable air release or combination air/vacuum release valves on existing SCPS force main.

Purpose and Needs to be Met by the Project
Inoperable air release valves contribute to both poor hydraulics and wasted pump energy created by allowing air to accumulate at high points along the force main. Replacing the air valves should improve the pump station performance. The odor control canisters at various ARVs will be replaced as part of construction.

Project Status - Describe what work, if any has been completed or underway for this project
Design work has started.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Replacement of the air valves should improve station efficiency, which may yield a nominal reduction in pump horsepower required to convey wastewater and therefore reduce electricity.

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

Estimated Project Costs :	
LCA Staff	\$ 5,000
Land Acquisition	\$ -
Construction/Equipment	\$ 140,000
Professional Services	\$ 25,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 180,000

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

Requested in this Capital Program	\$ 170,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 10,000				
1st Year	2018	\$ 170,000				\$ 170,000
2nd Year	2019	\$ -				
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	WYNNEWOOD INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	7/7/2017	Project No.	SD-S-6
Location	WWD, North Whitehall Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Regulatory	Preparer		CEV

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

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

Detailed Project Description
Includes updated CCTV inspection, identification of repair areas and remediation measures. Remediation project will be designed and bid in-house.

Purpose and Needs to be Met by the Project
During wet-weather events, flows into the WWTP exceed permitted capacity. Removal of I&I will reduce treatment costs, avoid hydraulic overloads and reclaim capacity for utilization by potential new customers.

Project Status - Describe what work, if any has been completed or underway for this project
The Test & Seal project was completed in Wynnewood by the end of 2016, however, wet weather flows remain a problem and an updated system-wide CCTV inspection must be performed in 2018 in order to scope out repairs in later plan years.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

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

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

Estimated Project Costs :	
LCA Staff	\$ 30,000
Land Acquisition	\$ -
Construction/Equipment	\$ 450,000
Professional Services	\$ -
Other	\$ -
Contingencies	\$ 20,000
Total Project Cost	\$ 500,000

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

Requested in this Capital Program	\$ 250,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 250,000				
1st Year	2018	\$ 20,000				\$ 20,000
2nd Year	2019	\$ 230,000				\$ 230,000
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	WYNNEWOOD TERRACE WWTP REMEDIATION & REPLACEMENT						
Budget Area	Wastewater	Department	Capital Works	Date	7/17/2017	Project No.	SD-S-7
Location	WWD, North Whitehall Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	35	Comments
Approx. No. of Customers Benefitted	219	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The existing WWTP is nearly 30 years-old and at the end of its useful life, as identified in a 2015 Condition Assessment study performed by a consultant. The project proposes the construction of a new 60,000 GPD plant at the same location.

Purpose and Needs to be Met by the Project
Project will address the high risk rating of this facility and restore the level of service. With ever increasing environmental restrictions, it is inevitable that the aging facility will produce violations. Regulatory agency input will be sought during design phase to incorporate anticipated discharge parameters into the design of the new plant.

Project Status - Describe what work, if any has been completed or underway for this project
A Condition Assessment of the WWTP was conducted in 2015 and design of the replacement facility will finish by the end of 2017 with construction in 2018 and 2019.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-7
Project Name	WYNNEWOOD TERRACE WWTP REMEDIATION & REPLACEMENT

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,200,000
Professional Services	\$ 160,000
Other	\$ -
Contingencies	\$ 100,000
Total Project Cost	\$ 1,510,000

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

Requested in this Capital Program	\$ 1,400,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid
Prior Years		\$ 110,000			
1st Year	2018	\$ 1,000,000			\$ 1,000,000
2nd Year	2019	\$ 400,000			\$ 400,000
3rd Year	2020	\$ -			
4th Year	2021	\$ -			
5th Year	2022	\$ -			

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

Project Name	WESTERN WEISENBERG WWTP MECHANICAL SCREEN						
Budget Area	Wastewater	Department	Capital Works	Date	7/7/2017	Project No.	SD-S-8
Location	AWD, Weisenberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	N/A	Preparer		CEV

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

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

Detailed Project Description
The project is the design and installation of an automatically cleaned mechanical screen and associated components.

Purpose and Needs to be Met by the Project
There is currently no means to remove the inorganic debris (rags, plastics, etc) from the facility's influent waste stream. This bulky material clogs pumps and periodically accumulates on downstream equipment, such as pump floats and piping. A mechanical screen will improve facility operation by removing the rags and other inorganic debris from the plant flow.

Project Status - Describe what work, if any has been completed or underway for this project
An internal investigation was performed to determine the cause of the rags and manual rag removal is typically performed.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
The mechanical screen will increase operational costs marginally mainly due to electrical power and debris disposal. The increase in operational costs may be offset by a decrease in staff costs associated with the impact of removing rags and inorganic debris that currently are not screened from the waste stream.

Project No.	SD-S-8
Project Name	WESTERN WEISENBERG WWTP MECHANICAL SCREEN

Estimated Project Costs :	
LCA Staff	\$ 10,000
Land Acquisition	\$ -
Construction/Equipment	\$ 250,000
Professional Services	\$ 50,000
Other	\$ -
Contingencies	\$ 30,000
Total Project Cost	\$ 340,000

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

Requested in this Capital Program	\$ 340,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid
Prior Years		\$ -			
1st Year	2018	\$ -			
2nd Year	2019	\$ 40,000			\$ 40,000
3rd Year	2020	\$ 300,000			\$ 300,000
4th Year	2021	\$ -			
5th Year	2022	\$ -			

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

Project Name	PARK PUMP STATION FORCE MAIN REHABILITATION						
Budget Area	Wastewater	Department	Capital Works	Date	8/9/2017	Project No.	SD-S-12
Location	LCA LLRI-1 Facilities in the City of Allentown			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	TBD	Comments **= The Park Pump Station provides service to 7 WLI signatories and 3 of the City signatories.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This project will address the internal rehabilitation of a yet to be identified quantity of existing Park Pump Station Force Main. An internal inspection of the pipe will be performed in 2017 to identify the extent of rehabilitation required, and will be used to develop the scope of construction, to be performed in 2018 and 2019.

Purpose and Needs to be Met by the Project
The Prestressed Concrete Cylinder Pipe (PCCP) force main pipe was installed in ~1980. This type of pipe is particularly subject to deterioration because corrosive Hydrogen Sulfide gas generated by the wastewater is converted to sulfuric acid which degrades concrete and any exposed reinforcing steel cylinder pipe, thereby impacting the structural integrity of the pipe. Rehabilitation of the force main will restore level of service, assure longevity and mitigate the risk of a catastrophic failure. Note: PCCP consists of a concrete core, a thin steel cylinder, high tensile prestressing wires and a mortar coating. Structural deterioration occurs from sulfuric acid acting on exposed steel reinforcing.

Project Status - Describe what work, if any has been completed or underway for this project
An internal inspection of the force main will be conducted in the latter part of 2017 and the scope of rehabilitation work will be determined. Note: Utilization of the funding shown in this Capital Plan is contingent upon a justifiable need.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-12
Project Name	PARK PUMP STATION FORCE MAIN REHABILITATION

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 2,000,000
Professional Services	\$ 350,000
Other	\$ 50,000
Contingencies	\$ 100,000
Total Project Cost	\$ 2,550,000

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

Requested in this Capital Program	\$ 2,500,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid
Prior Years		\$ 50,000			
1st Year	2018	\$ 1,500,000			\$ 1,500,000
2nd Year	2019	\$ 1,000,000			\$ 1,000,000
3rd Year	2020	\$ -			
4th Year	2021	\$ -			
5th Year	2022	\$ -			

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

Project Name	SAND SPRINGS WWTP REMEDIATION & REPLACEMENT						
Budget Area	Wastewater	Department	Capital Works	Date	7/17/2017	Project No.	SD-S-13
Location	SSD, North Whitehall Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	35	Comments
Approx. No. of Customers Benefitted	257	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
The existing WWTP is nearly 45 years-old and at the end of its useful life, as identified in a 2015 Condition Assessment study performed by a consultant. The project proposes a new 35,000 GPD plant to be constructed in 2018 at the same location.

Purpose and Needs to be Met by the Project
Project will address the high risk rating of this facility and restore the level of service. With ever increasing environmental restrictions, it is inevitable that the aging facility will produce violations. Regulatory agency input will be sought during design phase to incorporate anticipated discharge parameters into the design of the new plant.

Project Status - Describe what work, if any has been completed or underway for this project
A Condition Assessment of the WWTP was conducted in 2015 and the design of the replacement facility will be completed in 2017, with construction in 2018 and 2019.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-13
Project Name	SAND SPRINGS WWTP REMEDIATION & REPLACEMENT

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,200,000
Professional Services	\$ 160,000
Other	\$ -
Contingencies	\$ 100,000
Total Project Cost	\$ 1,510,000

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

Requested in this Capital Program	\$ 1,400,000
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Source of Funds						
		Need	Source			Reserves
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	
Prior Years		\$ 110,000				
1st Year	2018	\$ 800,000				\$ 800,000
2nd Year	2019	\$ 600,000				\$ 600,000
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	PARK PUMP STATION REHABILITATION/IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	7/17/2017	Project No.	SD-S-15
Location	LLRI-1, City of Allentown			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Regulatory	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	20	Comments **= The Park Pump Station provides service to 7 WLI signatories and 3 of City signatories.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
Improvements to the pump station include replacement of the existing pumps, suction and discharge side valves, pump speed controllers, motor control center (MCC) panel, SCADA system, wet well level instrumentation, building roof and force main drain valve. Also included are miscellaneous structural, HVAC and other improvements as outlined in Option 3 of the March 21, 2016 Park Pump Station Evaluation Technical Memorandum prepared by Arcadis.

Purpose and Needs to be Met by the Project
The Park Pump Station is an integral component of the sewerage network in the region, serving ten municipalities. Its operation also significantly impacts the operation of Allentown's wastewater treatment plant at Kline's Island. Many mechanical components are nearing the end of their service life with impacts to station performance and reliability. The improvements are needed to restore the station to its design capacity, maintain level of service and extend service life into the foreseeable future. This project is part of the work necessary to comply with the EPA Administrative Order (AO).

Project Status - Describe what work, if any has been completed or underway for this project
An Evaluation Technical Memorandum was prepared by Arcadis which assessed various options for continued operation of the pump station. The recommendations outlined in Option 3 of the Memorandum were selected to improve the reliability and capacity of the pump station through 2025.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
The installation of higher efficiency pumps and motors with VFD control as planned in this project should result in an electrical power savings, however at this time the amount is unknown.

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

Estimated Project Costs :	
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 4,000,000
Professional Services	\$ 450,000
Other	\$ 10,000
Contingencies	\$ 200,000
Total Project Cost	\$ 4,760,000

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

Requested in this Capital Program	\$ 4,460,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 300,000				
1st Year 2018	\$ 3,000,000				\$ 3,000,000
2nd Year 2019	\$ 1,400,000				\$ 1,400,000
3rd Year 2020	\$ 60,000				\$ 60,000
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	PARK PUMP STATION - SISTER STATION						
Budget Area	Wastewater	Department	Capital Works	Date	7/7/2017	Project No.	SD-S-16
Location	LLRI-1, City of Allentown			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	AM - High	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	20	Comments **= The Park Pump Station provides service to 7 WLI signatories and 3 of City signatories.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The draft Act 537 Plan identified future wastewater capacity needs for the Western Lehigh Interceptor and subsequent studies and flow models performed by Arcadis have determined that a conveyance capacity of 45 million gallons per day (mgd) is required at the Park Pump Station within the next 20 years. The recommended alternative for providing this capacity is the construction of a "Sister Pump Station" next to the existing Park Pump Station, with a design capacity of approximately 25 mgd.

Purpose and Needs to be Met by the Project
This project will provide future conveyance capacity as determined from prior studies and hydraulic models of the Western Lehigh Interceptor and mitigate sanitary sewer overflows.

Project Status - Describe what work, if any has been completed or underway for this project
This concept was discussed as part of preliminary planning for future wastewater capacity needs. A force main alignment study will be performed in 2019 and a feasibility study will be performed in 2020 with design starting in 2022.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-16
Project Name	PARK PUMP STATION - SISTER STATION

Estimated Project Costs :	
LCA Staff	\$ 40,000
Land Acquisition	\$ -
Construction/Equipment	\$ -
Professional Services	\$ 130,000
Other	\$ -
Contingencies	\$ 10,000
Total Project Cost	\$ 180,000

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

Requested in this Capital Program	\$ 180,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ -				
2nd Year	2019	\$ 60,000				\$ 60,000
3rd Year	2020	\$ 10,000				\$ 10,000
4th Year	2021	\$ 10,000				\$ 10,000
5th Year	2022	\$ 100,000				\$ 100,000

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

Project Name	HEIDELBERG HEIGHTS INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	6/30/2017	Project No.	SD-S-17
Location	HHD, Heidleberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Regulatory	Preparer		JMP

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

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

Detailed Project Description
Includes flow monitoring, SSES work in areas identified and remediation measures involving internal lining, spot repairs and complete dig-up pipe replacement. It is assumed that the construction project will be designed, managed and bid in-house.

Purpose and Needs to be Met by the Project
During wet-weather events, flows into the WTP are 3 to 4 times the plants capacity at times, causing operation problems and DEP violation notices.

Project Status - Describe what work, if any has been completed or underway for this project
Rehabilitation of four laterals and 320 linear-feet of main were completed in 2016. Complete CCTV update inspection was performed in 2017 and repair locations were determined from data.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
Reducing excess inflow/infiltration should reduce occurrence of overflows/bypasses at the wastewater treatment plant and save staff time and money, although it is difficult to quantify potential savings.

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

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 275,000
Professional Services	\$ 40,000
Other	\$ -
Contingencies	\$ 25,000
Total Project Cost	\$ 390,000

Project Estimate Level	
	Conceptual Estimate
	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 390,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 25,000				
1st Year 2018	\$ 200,000				\$ 200,000
2nd Year 2019	\$ 140,000				\$ 140,000
3rd Year 2020	\$ 25,000				\$ 25,000
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	HEIDELBERG HEIGHTS WWTP REHABILITATION						
Budget Area	Wastewater	Department	Capital Works	Date	7/7/2017	Project No.	SD-S-18
Location	HHD, Heidleberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		CEV

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

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

Detailed Project Description
Multi-year project to provide needed upgrades to the HH wastewater treatment plant. The painting of the 1990s-era SBR tanks will be completed in 2017. The partitioned steel EQ/sludge holding tank is part of the original plant from the 1970s and appears to be in poor condition with areas of corrosion. As the tank cannot readily be removed from service, there is a high consequence of failure and therefore a high risk rating. In 2018, a feasibility study will be performed by a consultant to assess the structural integrity of this tank and recommend rehabilitation or replacement options. It is anticipated that this 2 chamber tank will be replaced with two pre-cast concrete tanks, consisting of an equalization tank and a sludge holding tank.

Purpose and Needs to be Met by the Project
The original combined steel EQ/Sludge holding tank is approximately 40 years-old and at the end of its service life. The tank is anticipated to be replaced with two new concrete tanks in 2019. Design and permitting work will be completed in 2018.

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

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 20,000
Land Acquisition	\$ -
Construction/Equipment	\$ 375,000
Professional Services	\$ 60,000
Other	\$ -
Contingencies	\$ 50,000
Total Project Cost	\$ 505,000

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

Requested in this Capital Program	\$ 430,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 75,000				
1st Year	2018	\$ 30,000				\$ 30,000
2nd Year	2019	\$ 50,000				\$ 50,000
3rd Year	2020	\$ 300,000				\$ 300,000
4th Year	2021	\$ 25,000				\$ 25,000
5th Year	2022	\$ 25,000				\$ 25,000

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

Project Name	HEIDELBERG HEIGHTS WWTP MECHANICAL SCREEN						
Budget Area	Wastewater	Department	Capital Works	Date	7/7/2017	Project No.	SD-S-19
Location	HHD, Heidleberg Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	N/A	Preparer		CEV

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

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

Detailed Project Description
The project is the design and installation of a mechanical screen and associated components.

Purpose and Needs to be Met by the Project
The existing comminutor is subject to spillage and overflows. It is not effective in grinding and does not remove the inorganic debris from the waste stream, which allows binding of debris back together downstream in the SBR, fouling equipment. A mechanical screen will improve O&M by removing rags and inorganic debris from the waste stream.

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

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary
The mechanical screen will increase operational costs marginally mainly due to electrical power and debris disposal. The increase in operational costs may be offset by a decrease in staff costs associated with the impact of removing rags and inorganic debris that currently are not screened from the waste stream.

Project No.	SD-S-19
Project Name	HEIDELBERG HEIGHTS WWTP MECHANICAL SCREEN

Estimated Project Costs :	
LCA Staff	\$ 15,000
Land Acquisition	\$ -
Construction/Equipment	\$ 250,000
Professional Services	\$ 50,000
Other	\$ -
Contingencies	\$ 25,000
Total Project Cost	\$ 340,000

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

Requested in this Capital Program	\$ 340,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ -				
1st Year 2018	\$ -				
2nd Year 2019	\$ 40,000				\$ 40,000
3rd Year 2020	\$ 300,000				\$ 300,000
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	PRETREATMENT PLANT IMPROVEMENTS						
Budget Area	Wastewater	Department	Capital Works	Date	9/25/2017	Project No.	SD-S-22
Location	LCA Pretreatment Plant (<i>Industrial Blvd & Rt 100</i>)			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Sys Imp	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	20	Comments Provides pretreatment for industrial customers such as Boston Beer, Coca-Cola, Nestle Waters, Niagara, Ocean Spray, Bimbo and others.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This capital project is a comprehensive phased multi-year program to address the continued reliability and functionality of the LCA Wastewater Pre-treatment Plant. Long range program components include upgrading or replacing the aging cryogenic system, waste hauler receiving system improvements, facility SCADA system installation for process monitoring and control improvements, aeration tank process optimization, final settling process expansion, final clarifier drive re-builds, sludge dewatering equipment re-builds, digester boiler replacement, access road/concrete pavement construction, door replacements, roof replacements and HVAC sytem upgrades.

Purpose and Needs to be Met by the Project
Capital improvements at the facility have been underfunded for years. The lack of expenditures, corrosive environment, 24/7 operation since 1990 and significantly increased industrial loading rates all drive the need for repairs, replacements and potential process expansions or modifications. The Capital Plan endeavors to maintain the reliability and structural integrity of the physical plant with the objective of maintaining a high level of service and profitability.

Project Status - Describe what work, if any has been completed or underway for this project
An annual program to rebuild the belt filter presses was started in 2015. Also there is an annual pavement reconstruction project on the waste hauler route used by large trucks within the plant site to replace asphalt pavement with concrete pavement.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 200,000
Land Acquisition	\$ -
Construction/Equipment	\$ 3,600,000
Professional Services	\$ 200,000
Other	\$ -
Contingencies	\$ -
Total Project Cost	\$ 4,000,000

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

Requested in this Capital Program	\$ 4,000,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 800,000				\$ 800,000
2nd Year	2019	\$ 800,000				\$ 800,000
3rd Year	2020	\$ 800,000				\$ 800,000
4th Year	2021	\$ 800,000				\$ 800,000
5th Year	2022	\$ 800,000				\$ 800,000

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

Project Name	SIGNATORY INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department	Capital Works	Date	6/28/2017	Project No.	SD-S-24
Location	LCA WLI Sewer Service Area			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Sys Imp	Preparer		PLM

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

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

Detailed Project Description
The project includes two major components: (1) Investigatory/planning work such as flow monitoring, the SCARP development, SSES, Level of Service Determination, Alternatives Analysis, etc., that are necessary to develop the best course of action to reduce I&I within the system(s). Much of this work has been completed; (2) Design, permitting and the construction for rehabilitation of infrastructure that will be necessary to comply with the EPA Administrative Order (AO) for eliminating SSOs. LCA provides the leadership, technical expertise and administration for coordinating the AO projects located within the Signatory sewer systems.

Purpose and Needs to be Met by the Project
The Investigative phase has been completed. All SSES work, flow monitoring and modeling work has been completed to define the characteristics of the sewer basins and identify the leakiest basins. The planning phase is near completion and includes the alternatives evaluation, development of the capital improvements plan, cash flow projections and a memorandum of cooperation. Implementation of the capital improvement projects will be the focus of the next five years.

Project Status - Describe what work, if any has been completed or underway for this project
Investigation and alternatives analysis work has been completed. Implementation of the capital improvement projects will be the focus of the next five years.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 430,000
Land Acquisition	\$ -
Construction/Equipment	\$ 3,700,000
Professional Services	\$ 3,909,768
Other	\$ 3,675,000
Contingencies	\$ 366,482
Total Project Cost	\$ 12,081,250

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

Requested in this Capital Program	\$ 3,755,000
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Source of Funds					
		Need	Source		
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid
Prior Years		\$ 4,500,000			
1st Year	2018	\$ 1,585,000			\$ 1,585,000
2nd Year	2019	\$ 1,300,000			\$ 1,300,000
3rd Year	2020	\$ 470,000			\$ 470,000
4th Year	2021	\$ 200,000			\$ 200,000
5th Year	2022	\$ 200,000			\$ 200,000

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

Project Name	LYNN TOWNSHIP WWTP UPGRADES & EXPANSION						
Budget Area	Wastewater	Department	Capital Works	Date	6/22/2017	Project No.	SD-S-25
Location	Lynn Township			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		EH

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

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

Detailed Project Description
The Project is envisioned to be executed in two phases. Phase 1 includes influent chamber modifications, mechanical screen, a valve chamber with meter and chemical feed system that will be completed in 2018. Phase 2 is the expansion of the WWTP capacity from 80,000 GPD to 160,000 GPD. Gannett Fleming, who was also the LTSA engineer prior to the LCA acquisition of the system, will submit for the necessary permits from DEP.

Purpose and Needs to be Met by the Project
The Phase 1 upgrades will improve the WWTP operation. The Phase 2 WWTP expansion addressed in the Township's Act 537 Plan is driven by projected growth and system inflow and infiltration (I/I) issues. Timing of the WWTP expansion will be dependent upon I/I remediation efforts and growth.

Project Status - Describe what work, if any has been completed or underway for this project
The notice to proceed was issued for Phase 1 construction and shop drawings are being reviewed. Mobilization is not anticipated until November or December due to the long delivery time for the mechanical screen. Phase 2 design will begin in 2018.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :	
LCA Staff	\$ 399,000
Land Acquisition	\$ -
Construction/Equipment	\$ 3,539,533
Professional Services	\$ 463,022
Other	\$ 50,000
Contingencies	\$ 632,200
Total Project Cost	\$ 5,083,755

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

Requested in this Capital Program	\$ 4,468,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 615,755				
1st Year 2018	\$ 606,000				\$ 606,000
2nd Year 2019	\$ 89,000				\$ 89,000
3rd Year 2020	\$ 1,887,000				\$ 1,887,000
4th Year 2021	\$ 1,886,000				\$ 1,886,000
5th Year 2022	\$ -				

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

Project Name	LYNN TOWNSHIP INFLOW & INFILTRATION INVESTIGATION & REMEDIATION PROGRAM						
Budget Area	Wastewater	Department		Date	6/22/2017	Project No.	SD-S-26
Location	LTD, Lynn Township Division			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	Regulatory	Preparer		JMP

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

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

Detailed Project Description
Project will include a flow metering study and utilize prior CCTV inspection data to identify, target and repair/rehabilitate leaking sanitary sewer lines in the Lynn Township sewage collection system. A nominal amount of CCTV work is included in the scope to target identified problem areas pre- and post-construction. It is assumed that the construction project will be designed, managed and bid in-house.

Purpose and Needs to be Met by the Project
Reduce occurrence and magnitude of wet weather peak flows at the WWTP. Mitigate extraneous flow into the system. Maintain DEP compliance and mitigate hydraulic overloads.

Project Status - Describe what work, if any has been completed or underway for this project
Prior LCA CCTV inspection data will be utilized. An existing LCA-owned portable flow meter installed near NW Lehigh High School will be utilized as part of a flow meter study.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

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

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

Estimated Project Costs :	
LCA Staff	\$ 50,000
Land Acquisition	\$ -
Construction/Equipment	\$ 200,000
Professional Services	\$ 40,000
Other	\$ -
Contingencies	\$ 30,000
Total Project Cost	\$ 320,000

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

Requested in this Capital Program	\$ 290,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 30,000				
1st Year 2018	\$ 125,000				\$ 125,000
2nd Year 2019	\$ 125,000				\$ 125,000
3rd Year 2020	\$ 40,000				\$ 40,000
4th Year 2021	\$ -				
5th Year 2022	\$ -				

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

Project Name	SPRING CREEK PUMP STATION UPGRADES						
Budget Area	Wastewater	Department	Capital Works	Date	8/9/2017	Project No.	SD-S-27
Location	WLI - Lower Macungie Township			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	Sys Imp	Secondary	Efficiency	Preparer		ALK

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

Additional Information		
Expected Useful Life (Years)	20	Comments **=The Spring Creek Pump Station provides service to 7 WLI signatories.
Approx. No. of Customers Benefitted	**	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The project includes installing a comminutor in the pump station to reduce the amount of debris accumulation on the existing bar screens, replacing the manual weir gates with new motorized weir gates automated by an ultrasonic level detector located in the interceptor channel and upgrades to the SCADA system which include replacing the two existing Modicon Programmable Logic Controllers (PLC) located in the service building with new Modicon M340 PLCs. Convert the existing Modbus+ program to UnityPro and modify to include station upgrades.

Purpose and Needs to be Met by the Project
The addition of a comminutor will reduce debris accumulation on the bar screens which reduces the capacity of sewage that can be diverted to the wet well and must be manually cleaned. Automating the side gates will allow remote operation to maximize the pump station capabilities prior to and during wet weather events. Under the current situation, the station cannot be accessed when the area floods. The existing SCADA system PLCs are obsolete and parts needed for repairs and replacements are difficult to obtain.

Project Status - Describe what work, if any has been completed or underway for this project
The Design phase is currently underway.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-27
Project Name	SPRING CREEK PUMP STATION UPGRADES

Estimated Project Costs :	
LCA Staff	\$ 73,000
Land Acquisition	\$ -
Construction/Equipment	\$ 360,000
Professional Services	\$ 90,000
Other	\$ 20,000
Contingencies	\$ 36,000
Total Project Cost	\$ 579,000

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

Requested in this Capital Program	\$ 222,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 359,000				
1st Year	2018	\$ 222,000				\$ 222,000
2nd Year	2019	\$ -				
3rd Year	2020	\$ -				
4th Year	2021	\$ -				
5th Year	2022	\$ -				

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

Project Name	WLI - TREXLERTOWN AREA INTERCEPTOR UPGRADE						
Budget Area	Wastewater	Department	Capital Works	Date	6/14/2017	Project No.	SD-S-28
Location	WLI, Upper and Lower Macungie Townships			Prj. Type	AO	Prj. Funding	LCA
Prj. Category	Primary	Regulatory	Secondary	Sys Imp	Preparer		CEV

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

Additional Information		
Expected Useful Life (Years)	100	Comments
Approx. No. of Customers Benefitted	**	**=The WLI system provides service to 7 WLI signatories.
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	Yes	

Detailed Project Description
<p>The projects includes ~10,600 linear feet of 24 and 27-inch diameter sanitary sewer interceptor, installed parallel to the existing interceptor generally starting at MH U71 (near the intersection of Cetronia and Trexlertown Roads) and ending at MH L300 (near the intersection of Trexlertown and Spring Creek Roads). The project also includes 59 manholes, meter station and the acquisition of the necessary permanent and construction easements. Note: Trexlertown Road is the segment of the former RT 100 that the RT 222 Bypass circumvented.</p>

Purpose and Needs to be Met by the Project
Additional wastewater conveyance capacity is required in the segment of the WLI Interceptor included in this project to address I&I and projected dry-day overflows and to allow for future growth.

Project Status - Describe what work, if any has been completed or underway for this project
Hydraulic modeling and conceptual cost estimates were executed as part of the Signatory I&I project.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-S-28
Project Name	WLI - TREXLERTOWN AREA INTERCEPTOR UPGRADE

Estimated Project Costs :	
LCA Staff	\$ 300,000
Land Acquisition	\$ 400,000
Construction/Equipment	\$ 10,000,000
Professional Services	\$ 1,000,000
Other	\$ 100,000
Contingencies	\$ 500,000
Total Project Cost	\$ 12,300,000

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

Requested in this Capital Program	\$ 12,300,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2018	\$ 300,000				\$ 300,000
2nd Year	2019	\$ 500,000				\$ 500,000
3rd Year	2020	\$ 6,000,000				\$ 6,000,000
4th Year	2021	\$ 5,000,000				\$ 5,000,000
5th Year	2022	\$ 500,000				\$ 500,000

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