LEHIGH COUNTY AUTHORITY

ALLENTOWN, PA

FINAL DRAFT

5-YEAR CAPITAL PLAN

ADMINISTRATION

2018-2022

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

Project Type

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

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

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

Project Funding

Project Funding	Description
LCA	Funded by LCA
100% Reimb	All costs are 100% reimbursable by fees charged
Fees & LCA	Costs partly recovered through fees charged and partly funded by LCA
Allentown	Funded by the City of Allentown
CCRC	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
Regulatory	Required to meet Regulatory requirements
New Cust	New Customers
CA/OS	Concession Lease/Operating Standards
AM - Low	Asset Management - Low Risk
AM - Med	Asset Management - Medium Risk
AM - High	Asset Management - High Risk
AM - Varies	Asset Management - Varies[1]
Efficiency	Efficiency
Sys Imp	System Improvement
Rev Opprt	Revenue Opportunity
Planning	Planning
N/A	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
A	Annual Project, no approvals required
S	Study/Planning Phase
D	Design Phase
C	Construction/Implementation Phase
E	Entire Project
V	Various Phases
P	Pending Board approval

ADMINISTRATION

ADMINISTRATION
5-YEAR CAPITAL PLAN
2018-2022

CAPITAL FINANCING JUSTIFICATION

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

The Administrative projects are either a strictly Suburban Division (SD) project or a project which benefits both the City and Suburban Division (CON). In the case of the multi-division projects the total costs have been apportioned 33% to the Suburban Division and 67% to the City Division.

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

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

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

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

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

Funding Sources for each project are shown below.

ADMINISTRATION	2018	2019	2020	2021	2022	TOTAL
Project Costs	$595,000	$875,000	$455,000	$300,000	$403,000	$2,628,000
Funding Sources:						
Operating Reserves	$595,000	$875,000	$455,000	$300,000	$403,000	$2,628,000
Capital Reserves	-	-	-	-	-	-
New Borrowing	-	-	-	-	-	-
Total Funding	$595,000	$875,000	$455,000	$300,000	$403,000	$2,628,000

LEHIGH COUNTY AUTHORITY
ADMINISTRATION
2018-2022 CAPITAL PROGRAM

Project #	Name or Title of Proposal	(1) Prj. Type	(1) Funding	Approvals Stage (1)	Project Cost Total Cost	Project Cost Prior Years' (2)	This Capital Program 2018 Year -1	This Capital Program 2019 Year -2	This Capital Program 2020 Year -3	This Capital Program 2021 Year -4	This Capital Program 2022 Year -5	Total	Project Category (1) Primary	Project Category (1) Secondary
	Annual													
SD-A-1	SCADA Programming, Hardware Upgrades, Software & Training	Regular	LCA	A	$1,163,000	$ 310,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 253,000	$ 853,000	AM - Varies	Efficiency
CON-A-1*	Computer System Hardware & Software Upgrades	Regular	LCA	A	$ 523,000	$ 198,000	$ 100,000	$ 75,000	$ 50,000	$ 50,000	$ 50,000	$ 325,000	AM - High	N/A
	Subtotal				$1,686,000	$ 508,000	$ 250,000	$ 225,000	$ 200,000	$ 200,000	$ 303,000	$ 1,178,000		
	Previously Authorized													
CON-A-2*	GIS Upgrades & Application Development	Regular	LCA	V	$1,245,000	$ 525,000	$ 220,000	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 720,000	Efficiency	N/A
	Subtotal				$1,245,000	$ 525,000	$ 220,000	$ 200,000	$ 100,000	$ 100,000	$ 100,000	$ 720,000		
	Pending Authorization													
CON-A-3*	Information Technology Master Plan Update	Regular	LCA	P	$ 250,000	$ -	$ 75,000	$ 50,000	$ 125,000	$ -	$ -	$ 250,000	Planning	N/A
CON-A-4*	Document Management	Regular	LCA	P	$ 480,000	$ -	$ 50,000	$ 400,000	$ 30,000	$ -	$ -	$ 480,000	Efficiency	N/A
	Subtotal				$ 730,000	$ -	$ 125,000	$ 450,000	$ 155,000	$ -	$ -	$ 730,000		
	GRAND TOTAL				$3,661,000	$ 1,033,000	$ 595,000	$ 875,000	$ 455,000	$ 300,000	$ 403,000	$ 2,628,000		

(*) CON = a Project that benefits both the Allentown and Suburban Divisions where Project costs will be allocated based on system revenue 2/3 City Division and 1/3 Suburban Division.

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents
(2) Includes estimate of expenditures through 2017.

LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET

Project Name	SUPERVISORY CONTROL & DATA ACQUSITION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING						
Budget Area	Administration	Department	IT	Date	6/23/2017	Project No.	SD-A-1
Location	Various LCA Divisions located in multiple municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary		Efficiency	Preparer	PB

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

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

Detailed Project Description

This annual on-going project includes both programming and hardware enhancements to the SCADA system to provide reliable telemetry and effective/proactive/flexible control of our facilities. It also includes an upgrade to SCADA & Telog communications and radio replacement of Telco lines to reduce monthly Telco charges to resolve ongoing communication problems with critical facilities. Training on the Historian software package is also included.

Purpose and Needs to be Met by the Project

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

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

SCADA upgrades have been completed at Pine Lakes and Crestwood 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-A-1
Project Name	SUPERVISORY CONTROL & DATA ACQUISTION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING

Estimated Project Costs :		
LCA Staff	$	100,000
Land Acquisition	$	-
Construction/Equipment	$	600,000
Professional Services	$	383,000
Other	$	-
Contingencies	$	80,000
Total Project Cost	**$**	**1,163,000**

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

Requested in this Capital Program	**$**	**853,000**

Source of Funds						
		Need	**Source**			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		$ 310,000				
1st Year	2018	$ 150,000				$ 150,000
2nd Year	2019	$ 150,000				$ 150,000
3rd Year	2020	$ 150,000				$ 150,000
4th Year	2021	$ 150,000				$ 150,000
5th Year	2022	$ 253,000				$ 253,000

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PROJECT DETAIL SHEET

Project Name		COMPUTER SYSTEM HARDWARE & SOFTWARE UPGRADES					
Budget Area	Administration	**Department**	IT	**Date**	6/23/2017	**Project No.**	CON-A-1
Location		Allentown & Suburban Divisions		**Prj. Type**	Regular	**Prj. Funding**	LCA
Prj. Category	**Primary**	AM - High	**Secondary**	N/A		**Preparer**	PB

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

Additional Information		
Expected Useful Life (Years)	6	**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

This project includes both hardware and software costs for server replacements for units older than 6 years. Project costs will be allocated based on system revenue - 2/3 City Divison and 1/3 Suburban Divison.

Purpose and Needs to be Met by the Project

Improved efficiencies will assist employees in becoming more productive.

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

N/A

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :		
LCA Staff	$	-
Land Acquisition	$	-
Construction/Equipment	$	453,000
Professional Services	$	60,000
Other	$	-
Contingencies	$	10,000
Total Project Cost	$	**523,000**

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

Requested in this Capital Program	$	325,000

Source of Funds					
	Need	**Source**			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	$ 198,000				
1st Year 2018	$ 100,000				$ 100,000
2nd Year 2019	$ 75,000				$ 75,000
3rd Year 2020	$ 50,000				$ 50,000
4th Year 2021	$ 50,000				$ 50,000
5th Year 2022	$ 50,000				$ 50,000

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PROJECT DETAIL SHEET

Project Name		GEOGRAPHIC INFORMATION SYSTEM (GIS) UPGRADES & APPLICATION DEVELOPMENT					
Budget Area	Administration	**Department**	IT	**Date**	6/23/2017	**Project No.**	CON-A-2
Location		Allentown & Suburban Divisions		**Prj. Type**	Regular	**Prj. Funding**	LCA
Prj. Category	**Primary**	Efficiency	**Secondary**	N/A	**Preparer**		PB

Purpose of Expenditure *(check all that apply)*			
	New Facility		Correct Known or Potential Safety Issue
	Existing Facility - Rehabilitation/Upgrade		Equipment Obsolete
	Scheduled Replacement		Comply with Regulatory Requirements
X	Improved Service		Equipment/Infrastructure at End of Useful Life
	Study		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?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description

The mobile application was deployed in 2012 with final operational staff training in 2013 and included the development of additional mobile functionality. Applications on an as-needed basis may include integration of the PA One-Call system and fire hydrant and manhole inspection databases. Mapping of water service lines is included in the project along with expanded use of GPS attributing of assets. IT Master Planning efforts may dictate some of the application work. Project cost will be allocated based on percentage of work performed.

Purpose and Needs to be Met by the Project

The development and deployment of a mobile GIS application has provided our field personnel with valuable data at their fingertips. The new applications that will be built off of the mobile platform will allow even more data to be viewed in the field and will also allow data to be collected electronically in the field. This will eliminate the need for duplicate data entry and will assist in streamlining some existing processess. The applications developed will also easily integrate into the maintenance management system that LCA deployed in early 2015.

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

GPS location of buried assets is progressing.

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

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

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :		
LCA Staff	$	450,000
Land Acquisition	$	-
Construction/Equipment	$	75,000
Professional Services	$	645,000
Other	$	-
Contingencies	$	75,000
Total Project Cost	**$**	**1,245,000**

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

Requested in this Capital Program	$	720,000

Source of Funds						
		Need	**Source**			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		$ 525,000				
1st Year	2018	$ 220,000				$ 220,000
2nd Year	2019	$ 200,000				$ 200,000
3rd Year	2020	$ 100,000				$ 100,000
4th Year	2021	$ 100,000				$ 100,000
5th Year	2022	$ 100,000				$ 100,000

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PROJECT DETAIL SHEET

Project Name		INFORMATION TECHNOLOGY MASTER PLAN UPDATE					
Budget Area	Administration	**Department**	IT	**Date**	6/23/2017	**Project No.**	CON-A-3
Location	Allentown & Suburban Divisions			**Prj. Type**	Regular	**Prj. Funding**	LCA
Prj. Category	**Primary**	Planning	**Secondary**	N/A	**Preparer**		PB

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

Additional Information		
Expected Useful Life (Years)	10	**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

This project provides funds for the update of the 8-year old LCA IT Master Plan (completed in early 2012) and the implementation of the recommendations cited. Additionally it includes funding to investigate and implement, if applicable, software to manage developer related plan review and permitting and software to manage the backflow prevention and FOG programs. It may also include other work deemed beneficial to LCA. Project costs will be allocated based on system revenue - 2/3 City Division and 1/3 Suburban Division.

Purpose and Needs to be Met by the Project

The update identified needs in both technology and LCA's business/organization. In addition, IT will be a strategic and significant part of LCA's transition to the future as LCA begins a major knowledge transfer to the next generation of employees.

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	
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

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

Estimated Project Costs :			Project Estimate Level	
LCA Staff	$	15,000	X	Conceptual Estimate
Land Acquisition	$	-		Preliminary Estimate
Construction/Equipment	$	-		Budget Estimate
Professional Services	$	225,000		Definitive Estimate
Other	$	-		
Contingencies	$	10,000		
Total Project Cost	**$**	**250,000**		

Requested in this Capital Program	$	250,000

Source of Funds										
		Need		**Source**						
				Operating Revenues		Borrowing		Assessment, Contr.-in-Aid		Reserves
Prior Years		$	-							
1st Year	2018	$	75,000						$	75,000
2nd Year	2019	$	50,000						$	50,000
3rd Year	2020	$	125,000						$	125,000
4th Year	2021	$	-							
5th Year	2022	$	-							

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PROJECT DETAIL SHEET

Project Name			DOCUMENT MANAGEMENT				
Budget Area	Administration	**Department**	IT	**Date**	6/23/2017	**Project No.**	CON-A-4
Location	Allentown & Suburban Divisons			**Prj. Type**	Regular	**Prj. Funding**	LCA
Prj. Category	**Primary**	Efficiency	**Secondary**	N/A	**Preparer**		PB

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

Additional Information		
Expected Useful Life (Years)	10	**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
This project provides for an Electronic Document Management System (EDMS) to store, search and share documents. This project does not plan for the imaging of existing paper documents. Project costs will be allocated based on system revenue - 2/3 City Division and 1/3 Suburban Division.

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

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

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.	CON-A-4
Project Name	DOCUMENT MANAGEMENT

Estimated Project Costs :		
LCA Staff	$	125,000
Land Acquisition	$	-
Construction/Equipment	$	30,000
Professional Services	$	300,000
Other	$	-
Contingencies	$	25,000
Total Project Cost	**$**	**480,000**

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

Requested in this Capital Program	$	480,000

Source of Funds						
		Need	**Source**			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		$ -				
1st Year	2018	$ 50,000				$ 50,000
2nd Year	2019	$ 400,000				$ 400,000
3rd Year	2020	$ 30,000				$ 30,000
4th Year	2021	$ -				
5th Year	2022	$ -				