

November 6, 2013

BOARD ACTION/DISCUSSION ITEMS **NOVEMBER 2013 – DECEMBER 2013**

PRIORITY*	PROJECT/ISSUE	TYPE OF ACTION	TIMING**
<i>AS NEEDED</i>			
H	Update on LCA/City 537 Plan Study	Status Report	As needed
H	Acquisition/Growth Strategy Activities	Status Report	As needed
H	Jordan Creek Wastewater Plant	Status Report	As needed

WITHIN 45 DAYS

H	Allentown Division- WWTP Motor Control Center Replacement- Design Phase	Approval	Nov (B)
H	Allentown Division- Steel Tank Rehabilitation & Maintenance Contract	Approval	Nov (W or B)

WITHIN 75 DAYS

H	SCARP Program Management PSA	Approval	Dec (B)
H	Lynn Township WWTP- Phase-1 & 2 Upgrades- Additional Design Phase Services	Approval	Dec (B)
H	Allentown Division- Fuel Tank Installation- Design Phase	Approval	Dec (B)

11/25/13 November Board Meeting

12/9/13 December Board Meeting

* **H – High**
M – Medium
L – Low

** **(W) – Workshop**
(B) – Board
(W/B) - Either

LEHIGH COUNTY AUTHORITY

WORKSHOP AGENDA

Monday, November 11, 2013 – 12:00 PM

INITIAL ITEMS *(Collectively 5 Minutes)*

1. **Identify items for November Board Meeting**

- Review Board Discussion items, November 2013 – December 2013

ACTION/DISCUSSION ITEMS

1. **2014 Budget Assumptions**

The 2014 Budget Assumptions are attached (**green**) for discussion at the Workshop.

2. **2014-2023 Preliminary Capital Plan** *(Approval)*

The 2014 – 2023 Preliminary Capital Plan for the Suburban Division will be presented at the meeting and requires Board approval. The Plan is a separate attachment.

INFORMATION ITEMS

1. **LCA/City 537 Plan Study**

The 537 Plan Study Team will present an update to the Board. The update will include the status of the Jordan Creek alternative, conveyance matters, the DRBC, Land Application, and alternatives analysis.

OTHER ITEMS

1. ***None.***

2014 Budget Assumptions

Staffing-

1. **Suburban D&C**- Hire a laborer with goal to obtain WW license to supplement the one (1) operator currently on staff.
2. **Information Technology** – Hire a GIS Technician to assist GIS Manager with data attribution, CAD drawing, employee training and deployment of mobile GIS.
3. **Capital Works** – Hire a CW Specialist.
4. **City Summer Help** - (2) WFP laborers for mowing, trimming, painting and cleaning, (2) Water Distribution laborers to assist in construction and maintenance activities and (2) Sewer Line Maintenance laborers.
5. **Suburban Summer Help** – (3) laborers to perform hydrant and valve maintenance.
6. **Promote Project Engineer to Chief Engineer.**
7. **Purchasing Agent** – The additional demands of the City procurement effort should be met with the hiring of a Purchasing Agent. O/S Legal will increase to full time for six months as part of demands of bidding, contract work, etc.
8. **Additional TPO** – In order to reduce overtime, an additional TPO1 will be hired bringing the complement to 19.

Employee Benefits-

1. **Medical Insurance (All Suburban and City non-union)** - LCA's current annualized cost for non-SEIU union members is \$ 823,000 or \$ 12,100 per person. Based on Benecon's latest communication LCA will be receiving an 8% decrease in 2014 to \$ 11,200. In addition, LCA received a Pool Dividend Return of almost \$ 200,000 for 2012. We anticipate a similar return for 2013.
2. **Medical insurance (SEIU)** – SEIU's annualized cost is \$ 943,500 or \$ 13,000 per person. In accordance with the labor agreement the increase is capped at 12%. This would increase LCA's annual cost to \$ 1,060,000 or \$ 14,500 per person in 2014.
3. **Retiree Medical** – LCA will receive a modest decrease in the coverage for this group. For budget purposes LCA will assume no change in cost. The cost is fully recovered from retirees (21%) and the Trust (79%).
4. **Pension** – LCA's contribution rate of 9.8% will remain unchanged in 2014.
5. **Unemployment** – LCA is currently "self-insured". However, if compelled to pay into state and federal funds, or if LCA elects to contribute the 2014 budget will increase \$ 5,000 to \$ 62,000.

Fleet Management –

Research and implement a fleet management system for both city and suburban fleets.
Estimate - \$ 34,000 a year.

Education and Training –

Additional funding will be required to provide training for supervisors and managers. 14 of the supers and managers are new to the job so a dedicated training approach is needed in the areas of managing people, budgeting, discipline, conflict resolution, decision-making and team building. Estimate - \$ 25,000.

Employee training on new PLC software. Estimate \$ 10,000.

Human Resources –

Work will be required to match the City system job descriptions to LCA's format and to develop recruiting strategies for at-risk positions. Estimate- \$ 25,000.

Information Technology –

Deploying a Computerized Maintenance Management System (CMMS) for suburban operations and interfacing it with an upgrade to the current city system.

Implementing a Share Point site that allows for organization-wide application of file sharing, which would enhance SOP's and policies, as well as project management. Estimate - \$ 45,000.

Conversion of Telog to SCADA at remote system sites. Estimate - \$ 40,000.

Conversion from radio to cellular communication. Estimate \$ 35,000.

Upgrade to new PLC hardware. Estimate \$ 10,000.

Purchase and implementation of Permitting Software to track plan reviews and connection permits.

Knowledge Management –

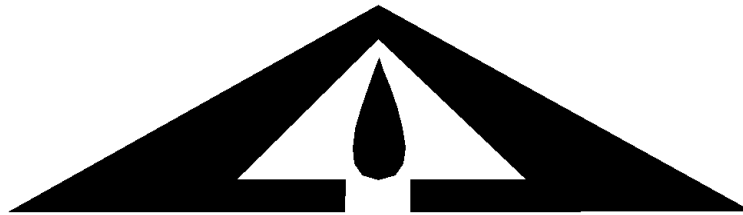
Funding already approved for this work will be adequate for 2014.

Customer Care –

Proportional increases in printing and postage costs to reflect expansion of customer base and the planned increase of 2 cents in postal rates.

Public Relations –

Budget will be proportionally higher.



LEHIGH COUNTY AUTHORITY

ALLENTOWN, PA

SUBURBAN DIVISION

10-YEAR PRELIMINARY CAPITAL PLAN

2014 – 2023

NOVEMBER 2013

**LEHIGH COUNTY AUTHORITY
10- YEAR CAPITAL PLAN
2012 - 2021**

INDEX

	Page
Introduction	1
Administration	
Capital Financing Justification	2
Department Summary	3
Project Detail	4-9
Water	
Capital Financing Justification	10-16
Department Summary	17
Project Details	18-43
Wastewater	
Capital Financing Justification	44-45
Department Summary	46
Project Details	47-65
Appendix	
Location Maps	

**LEHIGH COUNTY AUTHORITY
10-YEAR CAPITAL PLAN
2014 - 2023**

INTRODUCTION

The following report presents the Lehigh County Authority's Suburban Division 2014 - 2023 Capital Plan, which includes a total of \$151 million for capital projects and equipment purchases. The following table reflects comparative amounts between this year's and the prior year capital plans.

	<u>2013 – 2022</u>	<u>2014 – 2023</u>
Administration	\$ 3,807,800	\$ 3,876,630
Water	17,678,415	17,894,150
Wastewater	129,005,600	129,218,000
Total	\$ 150,491,815	\$ 150,988,780

The primary purpose of the Capital Plan is to define and prioritize capital needs and to determine the financial impact of constructing new facilities and purchasing equipment to meet those needs. The plan does not reflect a commitment to construct facilities or purchase equipment but rather serves as a long-range planning tool.

The report is segregated into three areas: Administration, Water and Wastewater. Included within each section are a Capital Financing Justification, a Project Summary and individual project detail sheets.

The following general assumptions have been used in developing this report.

1. All projections are in 2013 dollars. Estimates are based on 365 days per year. Annual available revenue is capitalized at 5% for 20 years for most projects. Costs for Projects S-25 and S-14 will be amortized over a 30 year period to ensure affordable rates for the two involved systems.
2. Expected operation and maintenance costs resulting from new projects are included in the justification. Inflationary increases of these additional costs and existing operational costs are not considered and, if encountered, may require future rate increases.
3. Customer growth estimates are based on past experience, condition of the housing market and LCA records of proposed development.
4. Future developer-installed water distribution and collector systems are deeded to LCA at no expense and are not reflected in this capital program unless they are to be upgraded or improved under a specific project.
5. The cost to acquire any additional water or wastewater systems is not included, unless under agreement. While LCA cannot predict which, if any systems will be available for future acquisition, the Authority plans to evaluate such opportunities and determine whether an acquisition is appropriate, as they arise. A \$60,000 annual cost has been included for both the water fund and the wastewater fund to investigate the feasibility of acquiring systems. Common rates are utilized in calculating user charge revenues available as incremental net revenues for all water system divisions.
6. For the three I/I Investigation and Remediation projects (S-6, S-17 and S-24) a combination of operating revenues, reserves and borrowed funds will be used to fund the costs. More specifics are contained in the detail sheet for each project.

In justifying the capital additions, the following revenue sources were considered; user charges, assessment and tapping fees, contributions-in-aid of construction, reduced operating costs, capital recovery fees, grants, and operating reserves. The capital financing justification section for each department provides details and explanation.

ADMINISTRATION

**ADMINISTRATION
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

The Administrative activities of the Authority are funded through charge-backs to the various operating and capital budgets. The only way to finance capital improvements are through reduced operating costs and increased charge-backs.

Project A-1 includes the replacement of mail machines, a folder/insertter, copiers and the staff vehicle with costs recovered through charge-backs to other Authority Funds.

Projects A-2 through A-6 are for information technology projects. Water fund operating reserves will be used to finance the projects with partial recovery through charge-backs to Authority wastewater funds.

Project A-8 began in 2011 and established a process for knowledge management documentation and succession planning.

**LEHIGH COUNTY AUTHORITY
2014 - 2023 CAPITAL PROGRAM**

ADMINISTRATION

Project #	Name or Title of Proposal	Approvals		Project Cost		This Capital Program							Dept. Priority	Funding (3)
		Stage (1)	Amount	Total Cost	Prior Years (2)	2014	2015	2016	2017	2018	2019 - 2023	Total		
ANNUAL														
A - 1	Office Equipment / Vehicle Replacement	A	NA	\$ 100,000	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ 6,000	\$ 64,000	100,000	High	Exp
A - 3	Computer System Hardware and Software Upgrades	A	N/A	307,250	31,750	55,750	28,750	8,750	33,750	8,750	139,750	275,500	High	Exp
A - 5	SCADA Programming, Hardware Upgrades, Software & Training	A	NA	460,000	-	148,000	80,000	29,000	29,000	29,000	145,000	460,000	High	Exp
	Subtotal Annual			867,250	31,750	203,750	108,750	67,750	62,750	43,750	348,750	835,500		
PREVIOUSLY AUTHORIZED (4)														
A - 2	GIS Upgrades & Application Develop.	Various	309,000	494,000	250,000	94,000	80,000	70,000	-	-	-	244,000	High	Exp
A - 6	Information Technology Master Plan Update and Implementation	S	151,884	2,709,000	150,000	300,000	500,000	500,000	450,000	450,000	359,000	2,559,000	High	Exp
A - 8	Knowledge Management/Sharing Program	C	393,800	596,250	358,120	238,130	-	-	-	-	-	238,130	High	Exp
	Subtotal Previously Authorized		854,684	3,799,250	758,120	632,130	580,000	570,000	450,000	450,000	359,000	3,041,130		
	Grand Total			\$ 4,666,500	\$ 789,870	\$ 835,880	\$ 688,750	\$ 637,750	\$ 512,750	\$ 493,750	\$ 707,750	\$ 3,876,630		

- (1) **A** = Annual Item, **S** = Study/Planning, **D** = Design, **C** = Construction / Implementation, **P** = Pending Approval, **E** = Entire Project Approved
(2) Includes estimate of expenditures through 2012.
(3) **SS** = Self-supporting project, **Exp** = Funded as general system expense, **PF** = Project partially funded from additional revenues and partially funded as a general system expense.
(4) Approved for stages indicated, other stages approval pending
Note: Shading indicates new project or revised project scope.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A - 1
Preparer: DDY

DEPARTMENT:

Sub-Organizational Unit: ADMINISTRATION

Date: 10/30/13

1. Proposal Title: Office Equipment and Staff Vehicle Replacement **2. Location:** Operation Ctr

3. Description: Replacement of Postage Meter, copier, folder/insertor and Office Vehicle.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

Equipment and vehicles are routinely replaced every 5 - 6 years to ensure reliability. The vehicle costs includes offset for old vehicle trade-ins.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____ -

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Yrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$	
Land Acquisition	\$	
Construction/Equip.	\$	125,000
Professional Services	\$	
Other (Labor)	\$	
Contingencies	\$	
Total Project Cost	\$	125,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$
Sub-Total	-

Total Operating Costs	\$ -
-----------------------	------

Requested in this Capital Program	\$	100,000
-----------------------------------	----	---------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$	\$	\$
1st Year	\$ -	\$ -	\$	\$	\$	\$
2nd Year	\$ -	\$ -	\$	\$	\$	\$
3rd Year	\$ 30,000	\$ 30,000	\$	\$	\$	\$
4th Year	\$ -	\$	\$	\$	\$	\$
5th Year	\$ 6,000	\$	\$	\$	\$	\$
6th thru 10th Years	\$ 64,000	\$ 64,000	\$	\$	\$	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A-2
 Preparer: PRB

DEPARTMENT: ADMINISTRATION
Sub-Organizational Unit: Water Capital

Date: 10/15/13

1. Proposal Title: Geographic Information System Upgrades
 And Application Development

2. Location: Operations Ctr

3. Description:

The mobile application was deployed in 2012 with final operational staff training in 32013 and included the development of additional mobile functionality. Applications on an as needed basis and may include integration of the PA One-Call system and fire hydrant and manhole inspection databases. IT Master Planning efforts may dictate some of the application work.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

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 processes. The applications developed will also easily integrate into any type of maintenance management system that LCA might eventually deploy.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	(2,000)
Personnel Services	\$ (43,700)
Supplies & Equipment	\$
Maintenance Svcs	\$ 5,000
Other	\$
Sub-Total	\$ (38,700)

8. Estimated Costs:

Engineering (Staff)	\$ 180,000
Land Acquisition	\$ -
Construction/Equip.	\$ 94,000
Professional Services	\$ 145,000
Other (Labor)	\$ 25,000
Contingencies	\$ 50,000
Total Project Cost	\$ 494,000

Indirect Operating Costs:	
Overhead Costs	\$ (78,660)
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ (78,660)
Total Operating Costs	\$ (117,360)

Requested in this
 Capital Program \$ **244,000**

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
		Oper.		Assess.,	
		Revenues *	Borrowing	Contr.-in-Aid	Reserves
	Need				
Prior Years	\$ 250,000	\$ 62,500	\$	\$	\$ 187,500
1st Year	\$ 94,000	\$ 23,500	\$	\$	\$ 70,500
2nd Year	\$ 80,000	\$ 20,000	\$ -	\$	\$ 60,000
3rd Year	\$ 70,000	\$ 17,500	\$	\$	\$ 52,500
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$ -	\$	\$
6th thru 10th Years	\$	\$	\$ -	\$ -	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

* The funding for this project will come initially from water fund reserves with chargebacks to wastewater funds representing 25% of costs.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A-3
 Preparer: PRB

DEPARTMENT: ADMINISTRATION
Sub-Organizational Unit:

Date: 10/3/13

1. Proposal Title: Computer System Hardware & Software Upgrades **2. Location:** Operation Center

3. Description: This project includes the upgrade of the Microsoft Office software, purchase of Human Resources software and server replacements for units older than 6 years.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 Improved efficiencies will assist employees in becoming more productive.

5. Status of Proposal:
☐ Preliminary Estimate
☐ Plans and Specs Completed
☒ Other (Specify)
☐ Contracted

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Yrs.	
Personnel Services	\$ -
Supplies & Equipment	\$ -
Maintenance Svcs	\$ -
Other	\$ -
Sub-Total	\$ -

8. Estimated Costs:

Staff Training	\$ -
Land Acquisition	\$ -
Computer Hardware	\$ 220,250
Vendor Svcs & Software	\$ 87,000
Other	\$ -
Misc. Services	\$ -
Contingencies (15%)	\$ -
Total Project Cost	\$ 307,250
Requested in this Capital Program	\$ 275,500

Indirect Operating Costs:

Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -
Total Operating Costs	\$ -

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$ -
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$ -

11. Source of Funds:

		Source			
		Oper. Revenues *	Borrowing	Assess., Contr.-in-Aid	Reserves
Need					
Prior Years	\$ 31,750	\$ 31,750	\$ -	\$ -	\$ -
1st Year	\$ 55,750	\$ 55,750	\$ -	\$ -	\$ -
2nd Year	\$ 28,750	\$ 28,750	\$ -	\$ -	\$ -
3rd Year	\$ 8,750	\$ 8,750	\$ -	\$ -	\$ -
4th Year	\$ 33,750	\$ 33,750	\$ -	\$ -	\$ -
5th Year	\$ 8,750	\$ 8,750	\$ -	\$ -	\$ -
6th thru 10th Years	\$ 139,750	\$ 139,750	\$ -	\$ -	\$ -

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

* The funding for this project will come initially from water fund revenues with chargebacks to wastewater funds representing 25% of costs.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A-5
Preparer: FJL

DEPARTMENT: ADMINISTRATION
Sub-Organizational Unit: Water Capital

Date: 10/13/13

1. **Proposal Title:** Supervisory Control and Data Acquisition (SCADA)
Programming, Hardware Upgrades, Software & Training

2. **Location:**

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

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
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.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	(400)
Personnel Services	\$ (8,672)
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ (8,672)

8. **Estimated Costs:**

Engineering (Staff)	\$ 28,000
Land Acquisition	\$
Construction/Equip.	\$ 87,000
Professional Services	\$ 302,000
Other (Labor)	\$ 7,000
Contingencies	\$ 36,000
Total Project Cost	\$ 460,000

Indirect Operating Costs:	
Overhead Costs	\$ (15,610)
Debt Service (5%-20yr.)	\$ -
Sub-Total	(15,610)

Total Operating Costs	\$ (24,282)
-----------------------	-------------

Requested in this Capital Program	\$ 460,000
-----------------------------------	------------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues *	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$		\$
1st Year	\$ 148,000	\$ 29,600	\$	\$		\$ 118,400
2nd Year	\$ 80,000	\$ 16,000	\$	\$		\$ 64,000
3rd Year	\$ 29,000	\$ 5,800	\$	\$		\$ 23,200
4th Year	\$ 29,000	\$ 5,800	\$	\$		\$ 23,200
5th Year	\$ 29,000	\$ 5,800	\$	\$		\$ 23,200
6th thru 10th Years	\$ 145,000	\$ 29,000	\$	\$		\$ 116,000

12. **Departmental Priority Rating:**

High X Medium _____ Low _____ Legally Mandated _____

* The funding for this project will come from water fund reserves with chargebacks to wastewater funds representing 20% of costs.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A-6
 Preparer: PRB

DEPARTMENT: ADMINISTRATION
Sub-Organizational Unit: Water Capital

Date: 10/3/13

1. Proposal Title: Information Technology Master Plan Update and Implementation

2. Location: Main Office

3. 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; and may also include other work deemed beneficial to LCA.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

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.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	900
Personnel Services	\$ 19,665
Supplies & Equipment	\$
Maintenance Svcs	\$ 10,000
Other	\$
Sub-Total	\$ 29,665

8. Estimated Costs:

Staff	\$ 510,000
Land Acquisition	\$ -
Construction/Equip.	\$ 680,000
Professional Services	\$ 1,077,000
Other	\$ 17,000
Contingencies	\$ 425,000
Total Project Cost	\$ 2,709,000

Requested in this
 Capital Program \$ 2,559,000

Indirect Operating Costs:	
Overhead Costs	\$ 35,397
Debt Service (5%-20yr.)	\$ -
Sub-Total	35,397
Total Operating Costs	\$ <u>65,062</u>

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$
Grants & Other	\$

11. Source of Funds:

	Need	Source				Reserves
		Oper. Revenues *	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$ 150,000	\$ 37,500	\$	\$		\$ 112,500
1st Year	\$ 300,000	\$ 175,000	\$	\$		\$ 125,000
2nd Year	\$ 500,000	\$ 125,000	\$	\$		\$ 375,000
3rd Year	\$ 500,000	\$ 125,000	\$	\$		\$ 375,000
4th Year	\$ 450,000	\$ 112,500	\$	\$		\$ 337,500
5th Year	\$ 450,000	\$ 112,500	\$	\$		\$ 337,500
6th thru 10th Years	\$ 359,000	\$ 89,750	\$	\$		\$ 269,250

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: A-8
 Preparer: LMA

DEPARTMENT: ADMINISTRATION
 Sub-Organizational Unit: Water Capital

Date: 10/2/13

1. **Proposal Title:** Knowledge Management - Knowledge Sharing Program 2. **Location:** Main Office

3. Description:

This project is meant to provide funds for the development of final plans and implementation of the recommendations from the Knowledge Management needs assessment work completed in prior years. Additional work will be required in 2014 and beyond to address changing needs of the expanded workforce following the Allentown system lease.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

A Knowledge Management program will include a structured method to begin capturing knowledge held by long-tenured employees and making that knowledge available for sharing with existing or future employees. Due to LCA's historical mode of operations, which relies on employee knowledge versus written procedures, LCA's operating, business and compliance performance is at risk until knowledge is captured via SOPs, process maps, team-building and mentoring, and IT systems. A skill-based pay system will also promote knowledge-sharing via incentivizing employees to obtain additional skills.

5. Status of Proposal:

☐ Preliminary Estimate
☐ Plans and Specs Completed
☒ Other (Specify)
contracted in 2012

6. Cost of Land Rights:

 ac. @ /acre
 l.f. @ /lin ft.
 Total: \$ -

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./((Decr.))

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Staff	\$	190,500
Land Acquisition	\$	
Construction/Equip.	\$	
Professional Services	\$	375,750
Other (Labor)	\$	
Contingencies	\$	30,000
Total Project Cost	\$	596,250

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -

Total Operating Costs	\$ -
-----------------------	------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source				
	Need	Oper. Revenues *	Borrowing	Assess., Contr.-in-Aid		Reserves
Prior Years	\$ 358,120	\$ 45,320	\$ 237,800	\$	\$	75,000
1st Year	\$ 238,130	\$ 59,535	\$	\$	\$	178,595
2nd Year	\$	\$	\$	\$	\$	
3rd Year	\$	\$	\$	\$	\$	
4th Year	\$	\$	\$	\$	\$	
5th Year	\$	\$	\$	\$	\$	
6th thru 10th Years	\$	\$	\$	\$	\$	

12. Departmental Priority Rating:

High X Medium Low Legally Mandated

* The funding for this project will come initially from water fund reserves and borrowed funds with chargebacks to wastewater funds representing 25% of costs.

WATER

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

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. By capitalizing user charges and reduced operating costs, a capital additions justification can be derived.

For purposes of this presentation, we have grouped developer contributions and grants as "construction contributions." Reimbursements from the wastewater fund and the City of Allentown systems are included under Operating Revenues.

We have assumed revenues based on the existing water rates, with incremental net revenues (gross revenues less operating expenses) available for debt service. Under current conditions, we estimate that 70 percent of user charge revenue is available as incremental net revenue. This available amount has been capitalized to determine additional borrowing capacity.

The Water Capital Plan is separated by service area with the following assumptions used to develop this report:

1. Additional customer estimates are based on past average experience and LCA records of proposed development.
2. Average annual residential usage and gross revenue at current rates:

	<u>Usage (gals)</u>	<u>Gross Revenue</u>
MFR – Central Lehigh Division	34,060	\$123
MFR – North Whitehall & Washington Township Divisions	28,250	\$110
3/4" – Central Lehigh Division	60,145	\$182
3/4" – North Whitehall Division	58,440	\$178
3/4" – Washington Township Division	49,940	\$159

The specific number of connections within each division is not separately shown, but growth in each division is used in calculating the capitalized revenues.

3. New commercial/industrial revenue is derived from the additional estimated customer usage, billed at current rate schedules.

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

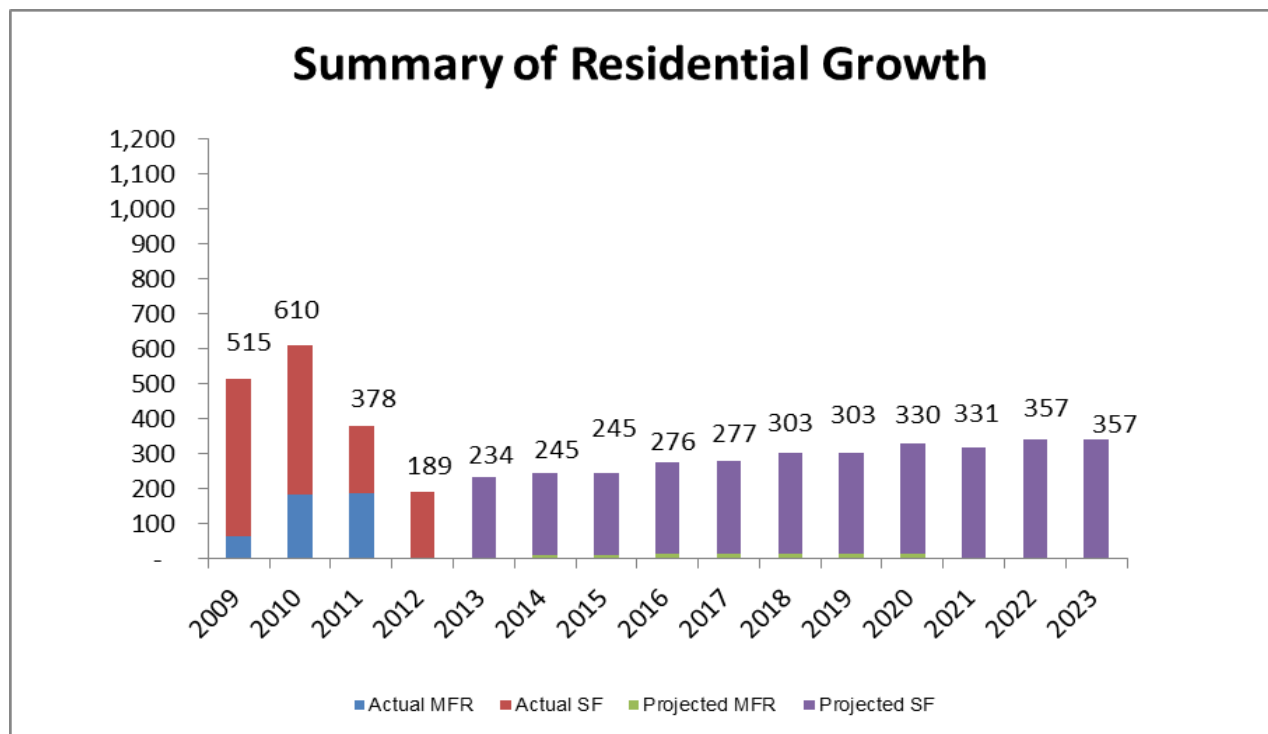
CAPITAL FINANCING JUSTIFICATION

PART I - USER CHARGES

This section considers incremental revenues expected from new customer growth during the next ten years. 70% of such revenues would be available to pay for additional debt service incurred through new project financing. Capitalized revenues from residential and commercial new connections, fire service connections and miscellaneous revenues are shown in Part IV.

RESIDENTIAL NEW CONNECTIONS

The chart below shows the actual and projected number of Multi-Family Apartments (MFA) and Single-Family (SF) residential connections to the Water System. New customers resulting from acquisitions are included as follows:



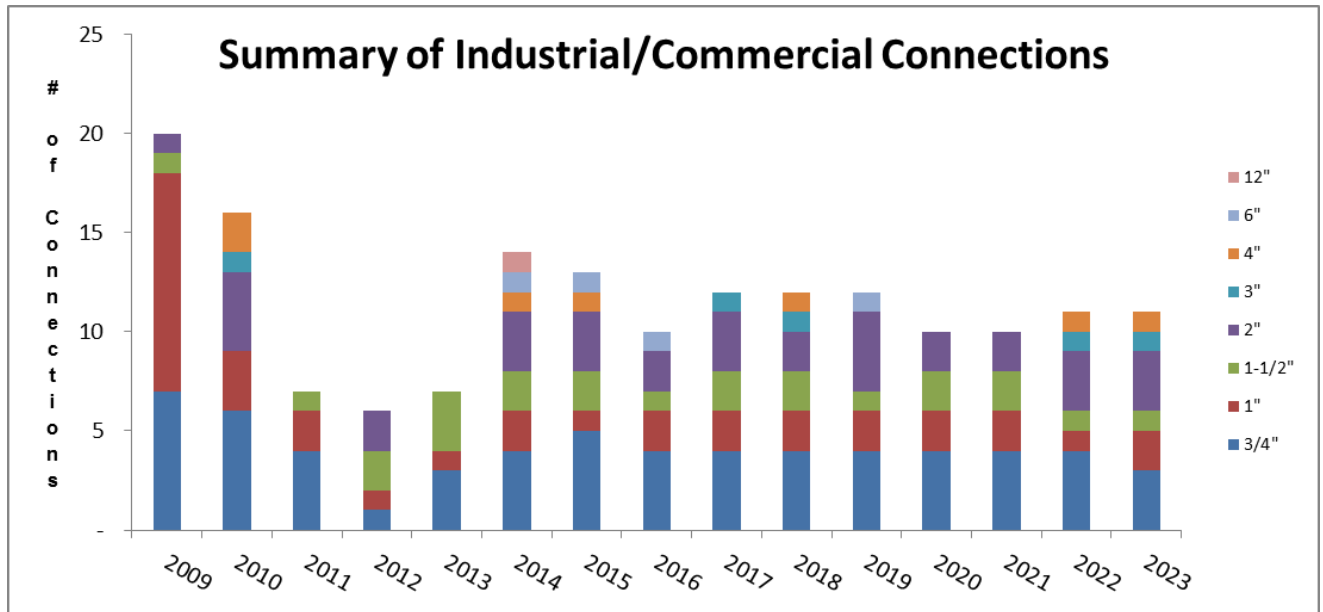
In 2013 the housing market began to show signs of improvement. Future growth is expected to be modest.

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

COMMERCIAL/INDUSTRIAL NEW CONNECTIONS

Actual connections from 2009 through 2012 and projections for 2013 through 2023 are shown below by meter size. As shown in the following chart, projections for future connections are trended slightly upward but are not expected to show a significant movement.



In addition to the new commercial connections shown in the chart above, Coca-Cola has indicated that their facility will increase water usage by approximately 173,000 gallons per day of water to meet expansion plans and Ocean Spray, which is expected to begin production in the first quarter of 2014, will ultimately need about 1 million gallons per day. No additional large industrial usage above current levels is projected.

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

FIRE SERVICES

The following table includes actual and projected public fire hydrant additions and private fire services resulting from new commercial/industrial connections.

<u>Year</u>	<u>Public Fire Hydrants</u>	<u>Private Fire Services</u>							
		<u>3/4"</u>	<u>2 1/2"</u>	<u>3"</u>	<u>4"</u>	<u>6"</u>	<u>8"</u>	<u>10"</u>	<u>12"</u>
2009	20	-	-	-	5	2	-	-	-
2010	16	19	-	-	12	3	1	2	-
2011	5	72	-	-	11	2	-	-	-
2012	14	74	-	-	-	1	1	1	-
2013	Est 5	90	-	-	2	1	1	1	-
2014	5	100	-	-	2	2	1	-	1
2015	11	125	1	1	1	1	1	-	-
2016	14	125	-	1	3	2	1	1	-
2017	12	125	1	-	1	1	1	-	-
2018	13	125	-	1	2	2	1	-	-
2019	14	125	1	1	2	1	1	-	-
2020	14	125	-	-	2	2	1	1	-
2021	14	125	1	1	1	1	1	-	-
2022	14	125	-	1	3	2	1	-	-
2023	13	125	-	-	2	2	1	-	-

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

PART II – TAPPING FEES

Both the Supply and Distribution Tapping fees reflect a onetime payment available to justify capital projects, which are designed to meet future needs. With the exception of Clearview Manor, Madison Park North, and Crestwood subdivisions, all new customer connections will be contributing a supply tapping fee. The capacity fee table below is based on the number of new residential and industrial/commercial customers less new connections within the developments exempted from the fees by agreement. Distribution tapping fee estimates are derived from recent historical trend and anticipated payments.

<u>Year</u>	<u>Supply Tapping Fees</u>	<u>Special and Distribution Tapping Fees</u>
2009	\$ 459,285	\$ 70,970
2010	197,895	15,504
2011	122,935	27,211
2012	208,424	44,000
2013 Est	170,000	20,000
2014	223,570	20,000
2015	223,775	20,000
2016	231,445	25,000
2017	213,730	25,000
2018	219,765	25,000
2019	254,425	25,000
2020	232,865	25,000
2021	239,780	25,000
2022	256,135	25,000
2023	255,655	25,000

PART III - CONSTRUCTION CONTRIBUTION

The background of these estimates can be obtained by summing the contributions from Project Detail Reports, W-1, W-2, W-10, W-15 and W-47. In addition, since the water fund will be initially paying for various studies and computerization efforts (A-2, A-3, A-5, A-6 and A-8) which also benefit the wastewater fund, a 25% reimbursement will be made to the water fund from the wastewater fund.

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

PART IV – TOTAL CAPITAL FINANCING JUSTIFICATION

Year	Capitalized User Charges - Part I		Part II Tapping Fees	Part III Construction Contributions	Total
	Residential & Commercial Connections	Fire Service Revenues			
2014	\$ 3,785,577	\$ 173,396	\$ 243,570	\$ 364,535	\$ 4,567,078.5
2015	2,382,847	162,611	243,775	522,800	3,312,033
2016	1,919,436	194,538	256,445	385,300	2,755,719
2017	675,354	132,832	238,730	695,050	1,741,966
2018	763,153	154,445	244,765	343,500	1,505,864
2019	828,266	142,508	279,425	309,000	1,559,199
2020	674,338	192,045	257,865	309,000	1,433,248
2021	676,061	140,015	264,780	309,000	1,389,856
2022	888,315	158,927	281,135	309,000	1,637,377
2023	891,297	151,114	255,655	309,000	1,607,066
Total	\$ 13,484,645	\$ 1,602,431	\$ 2,566,145	\$ 3,856,185	\$ 21,509,406

PART V – OUTSTANDING DEBT JUSTIFICATION

The following calculations indicate whether current revenues are sufficient to meet current annual debt service expenses. The revenues and expenses are for all water divisions.

Total Expected Debt (31 December 2012)	\$34,018,940	
Annual Debt Service		
Including 15% coverage (2012)		\$2,973,555
Estimated Annual Revenue 2012		
Large Industrial	\$ 790,000	
Other Non-Residential	2,250,000	
Residential	3,230,000	
Fire Service	960,000	
Interest Income & Other	110,000	
Rental Income	119,000	
Total Estimated Revenue	\$7,459,000	
Less Estimated Operating Expenses	(2,800,000)	
Total Available for Debt Service		<u>4,659,000</u>
Total Surplus		<u>\$1,685,445</u>

**WATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

The following table shows the Authority's water system debt and other pertinent information.

<u>Issue</u>	<u>Principal Outstanding 12/31/13</u>	<u>Interest Rate</u>
<u>Bonds:</u>		
2008 Bonds	\$ 9,735,000	3.55 % until 11/1/15, then variable
2010 Series A	11,590,000	3.7584%
2010 Series AA	7,780,000	2.55%
2011 Bonds	<u>1,069,942</u>	2.75%
Subtotal	<u>\$ 30,174,942</u>	
<u>Notes:</u>		
2007 Pennworks Loan	2,465,344	2%
2011 Pennvest Loan-Meter Replacement Phase 2	<u>1,378,656</u>	1% first 5 yrs, 1.51% next 15 yrs
Subtotal	<u>\$ 3,844,000</u>	
Grand Total	<u>\$ 34,018,942</u>	

We expect to have approximately \$5,300,000 of operating reserves available and an estimated \$5,000,000 of 2010 Construction fund monies and capital reserves to pay future capital costs.

PART VI – CONCLUSION

The following table provides a summary of sources and use of funds for the 10-year capital plan:

Sources of Funds:	
Revenues Justified (Part IV)	\$21,509,406
Available Reserves and Construction Funds	<u>10,333,000</u>
Total Sources	<u>\$31,842,406</u>
Use of Funds:	
Water Capital Costs	\$17,894,150
Projects (A-2 through A-8)	<u>3,876,630</u>
Total Use of Funds	<u>\$21,770,780</u>

As shown above, total revenue sources significantly exceed total use of funds. Although additional debt service for future debt borrowings is expected to be needed by 2016, the Capital Plan is fully justified by new revenues and should not result in a rate increase.

**LEHIGH COUNTY AUTHORITY
2014-2023 CAPITAL PROGRAM
WATER**

Project #	Name or Title of Proposal	Approvals		Project Cost		This Capital Program							Dept. Priority	Funding (3)
		Stage (1)	Amount	Total Cost	Prior Years' (2)	2014	2015	2016	2017	2018	2019 - 2023	Total		
W - 1	ANNUAL													
W - 2	New Water Meter Installations	A	NA	\$ 1,475,000	\$ -	\$ 115,000	\$ 125,000	\$ 130,000	\$ 135,000	\$ 140,000	\$ 830,000	\$ 1,475,000	Mandated	PF
W - 3	Distribution Mains - Development and Service Connections	A	NA	1,600,000	-	100,000	100,000	100,000	150,000	150,000	1,000,000	1,600,000	High	PF
W - 8	Distribution Mains - Upsizing	A	NA	950,000	-	75,000	75,000	100,000	100,000	100,000	500,000	950,000	High	Exp
W - 9	Water Company Acquisitions	A	NA	620,000	-	62,000	62,000	62,000	62,000	62,000	310,000	620,000	High	Exp
W - 10	Mobile Equipment	A	NA	720,000	-	60,000	85,000	105,000	35,000	35,000	400,000	720,000	High	Exp
W - 12	Main Replacement Projects	A	Partial-D	2,960,000	-	500,000	500,000	400,000	400,000	400,000	760,000	2,960,000	High	Exp
W - 28	Other Equipment	A	NA	370,000	-	60,000	60,000	40,000	30,000	30,000	150,000	370,000	High	Exp
W - 33	Reservoir Rehabilitation Contract	A	NA	1,794,000	-	168,000	171,000	175,000	180,000	200,000	900,000	1,794,000	High	Exp
	Subtotal Annual			10,489,000	-	1,140,000	1,178,000	1,112,000	1,092,000	1,117,000	4,850,000	10,489,000		
W - 19	PREVIOUSLY AUTHORIZED (4)													
W - 44	Water Facility Emergency Power Capability	C	1,624,717	1,624,500	1,449,500	175,000	-	-	-	-	-	175,000	Medium	Exp
W - 44	Lynn Water Company Improvements	Various	75,000	124,000	44,000	80,000	-	-	-	-	-	80,000	High	Exp
W - 27	Arcadia Pump Station Improvements	C	1,166,750	1,166,750	200,000	966,750	-	-	-	-	-	966,750	High	Exp
W - 45	Water System Hydraulic Model	C	251,580	284,000	208,100	-	75,900	-	-	-	-	75,900	Medium	Exp
W - 51	Route 309 Crossing at Sand Spring Road	Various	46,200	190,000	35,000	155,000	-	-	-	-	-	155,000	Medium	Exp
	Subtotal Previously Authorized			3,389,250	1,936,600	1,376,750	75,900	-	-	-	-	1,452,650		
W - 6	PENDING AUTHORIZATION													
W - 7	CLD- LCA/COA Driven General System Improvements	P		425,000	-	-	100,000	150,000	100,000	75,000	-	425,000	Medium	SS
W - 7	Trexletown Transmission Main - Seg 2	P		752,000	-	-	500,000	252,000	-	-	-	752,000	Medium	Exp
W - 15	LCA/Borough of Emmaus Interconnection	P		819,000	-	-	25,000	85,000	709,000	-	-	819,000	Medium	PF
W - 18	Water System Master Plan Update	P		285,000	-	-	140,000	102,000	43,000	-	-	285,000	Medium	Exp
W - 25	Hydro-Pneumatic Pump Station Upgrades (Pine Lakes of Lynn and Buss Acres)	P		495,500	1,000	160,000	334,500	-	-	-	-	494,500	High	Exp
W - 37	Additional Water Supply for Upper Milford Division	P		726,000	-	-	-	120,000	450,000	156,000	-	726,000	Medium	Exp
W - 38	Water System Energy Efficiency Upgrades	P		385,000	-	-	150,000	135,000	-	-	-	385,000	Medium	Exp
W - 46	LCA/ Borough of Macungie Emergency Interconnection	P		140,000	-	100,000	-	-	140,000	-	-	140,000	Low	Exp
W - 47	Regional Ground Water Model - Contribution	P		105,000	-	-	105,000	-	-	-	-	105,000	Low	PF
W - 48	Crestwood - New Alternate Water Supply	P		184,500	2,000	182,500	-	-	-	-	-	182,500	Medium	Exp
W - 49	CLD Auxiliary Pump Station & Main Extension Lower to Upper System	P		953,500	5,000	125,000	823,500	-	-	-	-	948,500	Medium	Exp
W - 50	Schantz Spring/ Minesite Rd Main Extension	P		220,000	-	-	220,000	-	-	-	-	220,000	Medium	Exp
W - 53	Non-residential Water Meter Replacement	P		470,000	-	285,000	205,000	-	-	-	-	470,000	Medium	Exp
	Subtotal Pending Authorization			5,960,500	8,000	832,500	2,603,000	844,000	1,442,000	231,000	-	5,952,500		
	Grand Total			\$ 19,838,750	\$ 1,944,600	\$ 3,349,250	\$ 3,856,900	\$ 1,956,000	\$ 2,534,000	\$ 1,348,000	\$ 4,850,000	\$ 17,894,150		

- (1) A= Annual Item, S= Study/Planning, D= Design, C= Construction / Implementation, P = Pending Approval, E = Entire Project Approved
(2) Includes estimate of expenditures through 2012.
(3) SS = Self-supporting project, Exp = Funded as general system expense, PF = Project partially funded from additional revenues and partially funded as a general system expense.
(4) Approved for stages indicated, other stages approval pending
Note: Shading indicates new project or revised project scope.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-1
 Preparer: FJL

DEPARTMENT: OPERATIONS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Water Meter Installations 2. Location: All Service Areas

3. Description: All new water customers must be metered. Meters through 2" are installed by LCA; larger than 2" are installed by customer after receiving LCA approval. In addition, backflow assemblies, up to 1" are installed by LCA at new connections. Also includes funds annually to cover routine meter, mxu and backflow replacements.

4. Justification (need, function, selection of time, specific relationship to any long-term work program): All metering & backflow expenses for new installations are recovered through customer-paid standard fees.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)
 Add. Personnel Man-Yrs.
 Personnel Services \$ -
 Supplies & Equipment \$ -
 Maintenance Svcs \$ -
 Other \$ -
 Sub-Total \$ -

8. Estimated Costs:
 Engineering (Staff) \$ -
 Land Acquisition \$ -
 Meters/Equipment \$ 1,115,000
 Professional Services \$ -
 Other (Labor) \$ 360,000
 Contingencies \$ -
 Total Project Cost \$ 1,475,000
 Requested in this
 Capital Program \$ 1,475,000

Indirect Operating Costs:
 Overhead Costs \$ -
 Debt Service (5%-20yr.) \$ -
 Sub-Total \$ -
 Total Operating Costs \$ -

10. Revenue Impact:
 Gain/Loss in Annual Revenue \$ -
 Assessment, Contribution-
 in-Aid-of-Construction \$ 1,250,000
 Grants & Other \$ -

11. Source of Funds:		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 115,000	\$	\$	\$ 92,000	\$ 23,000
2nd Year	\$ 125,000	\$	\$	\$ 103,000	\$ 22,000
3rd Year	\$ 130,000	\$	\$	\$ 105,000	\$ 25,000
4th Year	\$ 135,000	\$	\$	\$ 110,000	\$ 25,000
5th Year	\$ 140,000	\$	\$	\$ 125,000	\$ 15,000
6th thru 10th Years	\$ 830,000	\$	\$	\$ 715,000	\$ 115,000

12. Departmental Priority Rating:
 High _____ Medium _____ Low _____ Legally Mandated X

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-2
Preparer: ELH

DEPARTMENT: OPERATIONS
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. **Proposal Title:** Distribution Mains - Development & Service Connections

2. **Location:** CLD

3. **Description:** Plan review and construction inspection of extensions and connections to the water system. Also included are general planning expenses.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
To assure that development water lines and service connections to the LCA water system are designed and constructed according to LCA specifications.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____ 0

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Svcs	\$	-
Other	\$	-
Sub-Total	\$	-

8. **Estimated Costs:**

Engineering (Staff)	\$	1,600,000
Land Acquisition	\$	
Construction/Equip.	\$	
Professional Services	\$	
Other (Labor)	\$	
Contingencies	\$	
Total Project Cost	\$	<u>1,600,000</u>

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	-

Requested in this Capital Program	\$	<u>1,600,000</u>
-----------------------------------	----	------------------

Total Operating Costs	\$	<u>-</u>
-----------------------	----	----------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-in-Aid-of-Construction	\$	1,075,000
Grants & Other	\$	

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 100,000	\$	\$	\$ 75,000	25,000
2nd Year	\$ 100,000	\$	\$	\$ 75,000	25,000
3rd Year	\$ 100,000	\$	\$	\$ 75,000	25,000
4th Year	\$ 150,000	\$	\$	\$ 100,000	50,000
5th Year	\$ 150,000	\$	\$	\$ 100,000	50,000
6th thru 10th Years	\$ 1,000,000	\$	\$	\$ 650,000	350,000

12. **Departmental Priority Rating:**

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-3
 Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. Proposal Title: Distribution Mains - Upsizing / Contribution
2. Location: CLD and other systems

3. Description:
 Contribute to developer-installed systems to provide sizes indicated in the Water Master Plan, as amended;
 or the extension of water mains to serve a development.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 To economically provide proper pipe capacities and extensions to meet future service needs.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	
Supplies & Equipment	\$	
Maintenance Svcs	\$	
Other	\$	
Sub-Total	\$	-

8. Estimated Costs:

Engineering (Staff)	\$	100,000
Land Acquisition	\$	
Construction	\$	860,000
Professional Services	\$	
Other (Labor)	\$	
Contingencies	\$	
Total Project Cost	\$	<u>960,000</u>
Requested in this Capital Program	\$	<u><u>950,000</u></u>

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 76,230
Sub-Total	<u>76,230</u>
Total Operating Costs	<u><u>76,230</u></u>

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 75,000	\$	\$ 75,000	\$	\$
2nd Year	\$ 75,000	\$	\$ 75,000	\$	\$
3rd Year	\$ 100,000	\$	\$ 100,000	\$	\$
4th Year	\$ 100,000	\$	\$ 100,000	\$	\$
5th Year	\$ 100,000	\$	\$ 100,000	\$	\$
6th thru 10th Years	\$ 500,000	\$	\$ 500,000	\$	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-6
 Preparer: LMB

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 8/15/13

1. **Proposal Title:** CLD- LCA/COA Driven General System Improvements

2. **Location:** UMT

3. **Description:**

Improvements to the Central Lehigh Division to maximize water supplies from the City of Allentown (COA) interconnection. This project will include distribution system improvements, chlorine injection stations as well as power activated valves and metering at the reservoirs.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

With the completion of the COA, Phase 2 interconnect with the City system, significant flows of up to 7-MGD will be entering the distribution system from another location and a new direction. To maximize the benefits of these flows throughout the system, improvements to tie loops, add disinfection and control rate of fill and draw at the reservoirs may be necessary. These improvements will help flows, maintain water quality and pressure.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

2 ac. @ \$ 15,000 /acre
1500 l.f. @ \$ 2.00 /lin ft.
 Total: \$ 33,000

7. **Status of Land Rights:**

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	150
Personnel Services	\$ 3,416
Supplies & Equipment	\$ 1,500
Maintenance Svcs	\$ 500
Other	\$ _____
Sub-Total	\$ 5,416

8. **Estimated Costs:**

Engineering (Staff)	\$ 28,000
Land Acquisition	\$ 33,000
Construction/Equip.	\$ 264,000
Professional Services	\$ 68,000
Other (Labor)	\$ _____
Contingencies	\$ 32,000
Total Project Cost	\$ 425,000
Requested in this Capital Program	\$ 425,000

Indirect Operating Costs:

Overhead Costs	\$ 6,148
Debt Service (5%-20yr.)	\$ 34,103
Sub-Total	40,251

Total Operating Costs \$ 45,667

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$ _____
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$ _____

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
1st Year	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
2nd Year	\$ 100,000	\$ _____	\$ 100,000	\$ _____	\$ _____
3rd Year	\$ 150,000	\$ _____	\$ 150,000	\$ _____	\$ _____
4th Year	\$ 100,000	\$ _____	\$ 100,000	\$ _____	\$ _____
5th Year	\$ 75,000	\$ _____	\$ 75,000	\$ _____	\$ _____
6th thru 10th Years	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-7
 Preparer: JP

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. **Proposal Title:** Trexlertown Transmission Main - Segment 2 2. **Location:** CLD

3. **Description:** Construction of approximately 2000 LF. of 16" transmission mains, from the existing 20" main along Rt. 100, @ K & H Window World, to the existing 16" main in the alley, South of Rt. 222 and West of the railroad tracks.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The project will complete an important transmission loop which will enhance system performance and reliability, and provide public fire protection to the properties close to the route. Properties along the route would not be assessed and would not be required to connect. Properties that want to connect will pay the standard Capital Recovery and Meter Fees.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac.	@ _____ /acre
1,700 l.f.	@ \$ 20.00 /lin ft.
Total:	\$ 34000

7. **Status of Land Rights:**

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	10
Personnel Services	\$ 228
Supplies & Equipment	\$ 200
Maintenance Svcs	\$
Other	\$ 100
Sub-Total	\$ 528

8. **Estimated Costs:**

Engineering (Staff)	\$ 140,000
Land Acquisition	\$ 35,000
Construction/Equip.	\$ 465,000
Professional Services	\$ 47,000
Other	\$
Contingencies	\$ 65,000
Total Project Cost	\$ 752,000

Indirect Operating Costs:	50
Overhead Costs	\$ 410
Debt Service (5%-20yr.)	\$ 60,342
Sub-Total	60,752

Total Operating Costs	\$ 61,280
-----------------------	-----------

Requested in this Capital Program	\$ 752,000
-----------------------------------	------------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue *	\$ 800
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$ 500,000	\$	\$ 500,000	\$	\$
3rd Year	\$ 252,000	\$	\$ 252,000	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-8
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Water Company Acquisitions

2. Location: All

3. Description: \$60,000 annually is included for involvement in actively pursuing water system acquisitions. In addition, \$2,000 annually is allocated for payments made to the former owners of the Clearview Manor, Crestwood, Green Hills and Lynn Water Company as new customers connect to those systems.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 Payments are required by terms of the acquisition agreements.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$ -
Maintenance Svcs	\$ -
Other	\$ -
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$ 550,000
System Acquisition	\$ -
Construction/Equip.	\$ -
Professional Services	\$ 50,000
Other (Connection Fees)	\$ 20,000
Contingencies	\$ -
Total Project Cost	\$ 620,000
Requested in this Capital Program	\$ 620,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -

Total Operating Costs	\$ -
-----------------------	------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$ 64,300
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$ -

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ -	\$ -	\$ -	\$ -	\$ -
1st Year	\$ 62,000	\$ -	\$ -	\$ -	\$ 62,000
2nd Year	\$ 62,000	\$ -	\$ -	\$ -	\$ 62,000
3rd Year	\$ 62,000	\$ -	\$ -	\$ -	\$ 62,000
4th Year	\$ 62,000	\$ -	\$ -	\$ -	\$ 62,000
5th Year	\$ 62,000	\$ -	\$ -	\$ -	\$ 62,000
6th thru 10th Years	\$ 310,000	\$ -	\$ -	\$ -	\$ 310,000

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-10
 Preparer: FJL

DEPARTMENT: OPERATIONS
 Sub-Organizational Unit: Water Capital

Date: 10/13/15

1. Proposal Title: Mobile Equipment 2. Location: N/A

3. Description: 2014 1 Cargo Van & 1 Utility Tk 2017 1 Utility Tk.
 2015 1 Pick-up & 1 Dump Tk 5T 2018 Undefined
 2016 1 Utility Tk. & 1 SUV 2019-2023 Undefined

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 Vehicles are replacements. Aged vehicles will be traded in or sold to the highest bidder.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 Total: l.f. @ _____ /lin ft.
 \$ _____ 0

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Add. Personnel Man-Hrs.
 Personnel Services
 Supplies & Equipment \$ -
 Maintenance Svcs \$ -
 Other \$ -
 Sub-Total \$ -
 Indirect Operating Costs:
 Overhead Costs
 Debt Service (5%-20yr.) \$ -
 Sub-Total \$ -
 Total Operating Costs \$ -

8. Estimated Costs:
 Engineering (Staff) \$ 2,500
 Land Acquisition \$ -
 Construction/Equip. \$ 717,500
 Professional Services \$ -
 Other (Labor) \$ -
 Contingencies \$ -
 Total Project Cost \$ 720,000
 Requested in this
 Capital Program \$ 720,000

10 Gain/Loss in Annual Revenue
 Assessment, Contribution-
 in-Aid-of-Construction \$ -
 Grants & Other \$ 81,000
 \$ -

11. Source of Funds:

	Need	Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid*	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 60,000	\$	\$	\$ 15,000	\$ 45,000
2nd Year	\$ 85,000	\$	\$	\$ 4,000	\$ 81,000
3rd Year	\$ 105,000	\$	\$	\$ 10,000	\$ 95,000
4th Year	\$ 35,000	\$	\$	\$ 6,000	\$ 29,000
5th Year	\$ 35,000	\$	\$	\$ 6,000	\$ 29,000
6th thru 10th Years	\$ 400,000	\$	\$	\$ 40,000	\$ 360,000

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

CAPITAL PROGRAMMING PROJECT DETAIL

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. Proposal Title: Main Replacement Projects **2. Location:** Suburban Divs.

3. Description: Replacement of cast iron (CI) mains in water systems that may experience high failure rates.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

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. This plan and the funding will provide for future projects on an as-needed basis.

5. Status of Proposal:

☐ Preliminary Estimate
☐ Plans and Specs Completed
☒ Other (Specify)

plans for Clearview Manor completed, but not Clearview Farms or years 2-10

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	(50)
Personnel Services	\$ (1,139)
Supplies & Equipment	\$ (400)
Maintenance Svcs	\$ (2,000)
Other	\$ (1,450)
Sub-Total	\$ (4,989)

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

8. Estimated Costs:

Engineering (Staff)	\$ 415,000
Land Acquisition	\$ -
Construction/Equip.	\$ 2,040,000
Professional Services	\$ 120,000
Other (Labor)	\$ -
Contingencies	\$ 385,000
Total Project Cost	\$ 2,960,000

Requested in this
 Capital Program \$ 2,960,000

Indirect Operating Costs:

Overhead Costs	\$ (2,049)
Debt Service (5%-20yr.)	\$ 40,121
Sub-Total	38,072

Total Operating Costs \$ 33,084

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 500,000	\$	\$ 500,000	\$	\$
2nd Year	\$ 500,000	\$	\$	\$	\$ 500,000
3rd Year	\$ 400,000	\$	\$	\$	\$ 400,000
4th Year	\$ 400,000	\$	\$	\$	\$ 400,000
5th Year	\$ 400,000	\$	\$	\$	\$ 400,000
6th thru 10th Years	\$ 760,000	\$	\$	\$	\$ 760,000

CAPITAL PROGRAMMING PROJECT DETAIL

DEPARTMENT: Capital Works
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: LCA / Borough of Emmaus Interconnection

2. Location: CLD

3. Description: Construction of approximately 2,000 linear-feet of 12-inch diameter water main and a two-way meter pit to connect the Central Lehigh Division to the Borough of Emmaus's water system.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 Interconnections as supported by the LCA Strategic Plan provide added reliability and redundancy in water supply for both systems. Per the agreement the parties will equally share the cost of the interconnection.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

ac. @ /acre
 2000 l.f. @ \$ 20.00 /lin ft.
 Total: \$ 40,000

7. Status of Land Rights:

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	10
Personnel Services	\$ 219
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ 219

8. Estimated Costs:

Engineering (Staff)	\$ 75,000
Land Acquisition	\$ 42,000
Construction/Equip.	\$ 540,000
Professional Services	\$ 62,000
Other (Labor)	\$
Contingencies	\$ 100,000
Total Project Cost	\$ 819,000

Indirect Operating Costs:

Overhead Costs	\$ 393
Debt Service (5%-20yr.)	\$ 32,859
Sub-Total	\$ 33,253

Total Operating Costs	\$ 33,471
-----------------------	-----------

Requested in this Capital Program	\$ 819,000
-----------------------------------	------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 409,500
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$ 25,000	\$	\$ 12,500	\$ 12,500	\$
3rd Year	\$ 85,000	\$	\$ 42,500	\$ 42,500	\$
4th Year	\$ 709,000	\$	\$ 354,500	\$ 354,500	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium _____ Low X Legally Mandated _____

CAPITAL PROGRAMMING PROJECT DETAIL

DEPARTMENT: Capital Works
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. Proposal Title: Water System Master Plans

2. Location: CLD, NWD

3. Description:

Update the Water System Master Plan for the Central Lehigh Division (CLD) as prepared by Gannett Fleming in 1994.
 Prepare a Water System Master Plan for the North Whitehall Division (NWD).

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

It has been 18 years since the Master Plan for Water System development in the CLD was updated. This update, along with the development of a Master Plan for Water System development in the NWD, will provide for the orderly improvement and expansion of the water systems to meet the distribution, storage, supply, and treatment needs of the service areas in an economical and efficient manner. The recently completed CLD model will be utilized by the selected consultant for some of the analysis.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ -

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./ (Decr.)

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Svcs	\$	-
Other	\$	-
Sub-Total	\$	-

8. Estimated Costs:

Engineering (Staff)	\$	73,000
Land Acquisition	\$	
Construction/Equip.	\$	
Professional Services	\$	180,000
Other (Misc.)	\$	6,000
Contingencies	\$	26,000
Total Project Cost	\$	285,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -

Total Operating Costs	\$ -
-----------------------	------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-		
in-Aid-of-Construction	\$	-
Grants & Other	\$	

11. Source of Funds:

Source

	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$ 140,000	\$	\$	\$	\$ 140,000
3rd Year	\$ 102,000	\$	\$	\$	\$ 102,000
4th Year	\$ 43,000	\$	\$	\$	\$ 43,000
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-19
 Preparer: JP

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Water Facility Emergency Power Capability

2. Location: **Varies**

3. Description: Includes the purchase of 2 mobile generators (completed in 2008) . Fixed generator and automatic transfer switches with plug-ins will be installed at the primary facility in eight satellite systems & two WTPs (to be complete by mid-Nov 2013) and at LCA's Office Operations Center (to be complete by Mar-2014). The project also reconfigured the electrical connection for a trailer mounted generator at the Heidelberg Heights WTP (completed in 2010) to allow it to be utilized at other sites in the event of an emergency.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

Will provide the means to run well stations and wastewater treatment plants , to sustain water and wastewater service service in the event of long term local or regional power outages; and maintain a fully functional Operations Center.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ \$ 20.00 /lin ft.
 Total: \$ 0

7. Status of Land Rights:

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	50
Personnel Services	\$ 1,093
Supplies & Equipment	\$ 2,000
Maintenance Svcs	\$ 4,000
Other	\$ 100
Sub-Total	\$ 7,193

8. Estimated Costs:

Engineering (Staff)	\$ 150,000
Land Acquisition	\$
Construction/Equip.	\$ 1,225,000
Professional Services	\$ 155,000
Other	\$ 4,500
Contingencies	\$ 90,000
Total Project Cost	\$ 1,624,500

Indirect Operating Costs:	50
Overhead Costs	\$ 1,967
Debt Service (5%-20yr.)	\$ 130,354
Sub-Total	132,321

Total Operating Costs	\$ 139,513
-----------------------	------------

Requested in this Capital Program	\$ 175,000
-----------------------------------	------------

10. Revenue Impact:

Gain/Loss in Annual Revenue *	\$ 800
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 1,449,500	\$	\$ 1,449,500	\$	\$
1st Year	\$ 175,000	\$	\$ 175,000	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

CAPITAL PROGRAMMING PROJECT DETAIL

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Hydro-Pneumatic Pump Station Upgrades

2. Location: PLD, UMCD

(Pine Lakes of Lynn and Upper Milford Central Division)

3. Description: Includes the equipment necessary to convert the hydro-pneumatic operated equipment to a variable frequency drive-controlled double pumping system. The project also allocates funding for some electrical upgrades extensive upgrades are out-of-scope.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

Currently, Pine Lakes of Lynn and the Upper Milford Central Division (UMCD) are the only two hydro-pneumatic systems that LCA operates and both have proven to be problematic over time. The upgrades will enhance the reliability of service.

Note: Depending upon the outcome of the UMCD Radon Study (currently underway) proportional share of funding allocated in this project for UMCD double pumping will be reallocated to a new project offering the best solution to provide water that will meet future EPA requirements.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ -

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	(300)
Personnel Services	\$ (6,831)
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$ (1,050)
Sub-Total	\$ (7,881)

8. Estimated Costs:

Engineering (Staff)	\$ 75,000
Land Acquisition	\$
Construction/Equip.	\$ 260,000
Professional Services	\$ 110,000
Other (permits/misc.)	\$ 6,500
Contingencies	\$ 44,000
Total Project Cost	\$ 495,500

Indirect Operating Costs:	
Overhead Costs	\$ (12,296)
Debt Service (5%-20yr.)	\$ 39,760
Sub-Total	\$ 27,464

Total Operating Costs	\$ 19,583
-----------------------	-----------

Requested in this Capital Program	\$ 494,500
-----------------------------------	------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 1,000	\$	\$ 1,000	\$	\$
1st Year	\$ 160,000	\$	\$ 160,000	\$	\$
2nd Year	\$ 334,500	\$	\$ 334,500	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High ☒ Medium _____ Low _____ Legally Mandated _____

CAPITAL PROGRAMMING PROJECT DETAIL

DEPARTMENT: CAPITAL WORKS

Sub-Organizational Unit: Water Capital

Date: 7/31/121. **Proposal Title:** Arcadia Pumping Station Improvements2. **Location:** AWD

3. **Description:** Includes re-piping the station, replacing distribution pumps with variable frequency drives (VFD), emergency generator, SCADA control, PH adjustment system and a redundant fire pump to meet future needs. Costs were included for inspection of the water storage tank and well supply lines. Any rehabilitation costs for these facilities were not included. In addition, a PWS permit has been received for a Community Water System. Previously the system is operated under a Brief Description Form which limits the number of residential connections and/or population served.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

The pump station was designed to serve only the Arcadia West Industrial Park. Given projected expansion of the system to serve the Hillwood Project, the Northwestern Elementary School Expansion, the Gateway View development and various existing commercial properties along Route 873, a full evaluation and upgrade of the station will be required.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	1,000
Supplies & Equipment	\$	2,000
Maintenance Svcs	\$	8,000
Other (electric)	\$	11,000
Sub-Total	\$	11,000

8. **Estimated Costs:**

Engineering (Staff)	\$	135,000
Land Acquisition	\$	
Construction/Equip.	\$	768,000
Professional Services	\$	165,000
Other (Misc.)	\$	18,500
Contingencies	\$	80,250
Total Project Cost	\$	1,166,750

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 93,623
Sub-Total	\$ 93,623

Total Operating Costs	\$ 104,623
-----------------------	------------

Requested in this Capital Program	\$	966,750
-----------------------------------	----	---------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-in-Aid-of-Construction	\$	-
Grants & Other	\$	

11. **Source of Funds:**

			Source			
	Need		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 200,000	\$		\$ 200,000	\$	\$
1st Year	\$ 966,750	\$		\$ 966,750	\$	\$
2nd Year	\$	\$		\$	\$	\$
3rd Year	\$	\$		\$	\$	\$
4th Year	\$	\$		\$	\$	\$
5th Year	\$	\$		\$	\$	\$
6th thru 10th Years	\$	\$		\$	\$	\$

12. **Departmental Priority Rating:**

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority

CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-28
 Preparer: FJL

DEPARTMENT: Operations
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Other Equipment

2. Location:

3. Description: Individual equipment items greater than \$5,000.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

Replacement and new equipment is required from time to time to maintain and improve service integrity and reliability. Items include electric and electronic equipment, pumping equipment, leak detection equipment and other equipment as needed.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$	
Land Acquisition	\$	
Construction/Equip.	\$	370,000
Professional Services	\$	
Other (Labor)	\$	
Contingencies	\$	
Total Project Cost	\$	<u>370,000</u>

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$
Sub-Total	\$ -

Total Operating Costs	\$ <u>-</u>
-----------------------	-------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

Requested in this Capital Program	\$ <u><u>370,000</u></u>
-----------------------------------	--------------------------

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 60,000	\$	\$	\$	\$ 60,000
2nd Year	\$ 60,000	\$	\$	\$	\$ 60,000
3rd Year	\$ 40,000	\$	\$	\$	\$ 40,000
4th Year	\$ 30,000	\$	\$	\$	\$ 30,000
5th Year	\$ 30,000	\$	\$	\$	\$ 30,000
6th thru 10th Years	\$ 150,000	\$	\$	\$	\$ 150,000

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-33
 Preparer: FJL

DEPARTMENT: OPERATIONS
 Sub-Organizational Unit: Water Capital

Date: 10/13/13

1. **Proposal Title:** Reservoir Rehabilitation Contract 2. **Location:** UMT, NWT

3. **Description:** To contract with a national tank maintenance firm for inspection, maintenance and rehabilitation services for five above ground steel water tanks.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

The reservoirs are in need of regular inspection, maintenance and rehabilitation as they age. The contracted firm will be responsible for these continuous on going services for as long a LCA deems the costs to be justifiable. This arrangement takes the work load off of existing staff, both Operational and Capital Works, in planning and implementing these critical programs.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ 0

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./Decr.)**

Add. Personnel Man-Hrs.	(1,250)
Personnel Services	\$ (27,313)
Supplies & Equipment	\$ (6,000)
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ (33,313)

8. **Estimated Costs:**

Engineering (Staff)	\$ 30,000
Land Acquisition	\$
Construction/Equip.	\$ 1,764,000
Professional Services	\$
Other (Labor)	\$
Contingencies	\$
Total Project Cost	\$ 1,794,000
Requested in this Capital Program	\$ 1,794,000

Indirect Operating Costs:

Overhead Costs	\$ (49,163)
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ (49,163)

Total Operating Costs \$ (82,475)

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
	Need	Oper.	Assess.,		Reserves
		Revenues	Borrowing	Contr.-in-Aid	
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 168,000	\$	\$	\$	\$ 168,000
2nd Year	\$ 171,000	\$	\$	\$	\$ 171,000
3rd Year	\$ 175,000	\$	\$	\$	\$ 175,000
4th Year	\$ 180,000	\$	\$	\$	\$ 180,000
5th Year	\$ 200,000	\$	\$	\$	\$ 200,000
6th thru 10th Years	\$ 900,000	\$	\$	\$	\$ 900,000

12. **Departmental Priority Rating:**

High ☒ Medium ☐ Low ☐ Legally Mandated ☐

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-37
Preparer: LMB

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 8/15/13

1. Proposal Title: Additional Water Supply for Upper Milford Division **2. Location:** Upper Milford Twp.

3. Description: Three viable options were considered, connection to the CLD system, connection to the Emmaus system; both of which would require a water pressure booster pumping station; and development of new ground water supply (wells). Development of new ground water supply is reflected in this project detail sheet.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
When the customers in the proposed Estates at Maple Ridge development are added to this system, the supplies will no longer have reserve capacity above the projected peak day demands.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

7. Status of Land Rights:

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

8. Estimated Costs:

Engineering (Staff)	\$	50,000
Land Acquisition	\$	20,000
Construction/Equip.	\$	498,000
Professional Services	\$	78,000
Other (Labor)	\$	
Contingencies	\$	80,000
Total Project Cost	\$	<u>726,000</u>
Requested in this Capital Program	\$	<u>726,000</u>

6. Cost of Land Rights:

1.5 ac.	@	\$ 11,500 /acre
l.f.	@	/lin ft.
Total:	\$	<u>17,250</u>

6. Cost of Land Rights:

1.5 ac.	@	\$ 11,500 /acre
l.f.	@	/lin ft.
Total:	\$	<u>17,250</u>

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.		100
Personnel Services	\$	2,277
Supplies & Equipment	\$	4,000
Maintenance Svcs	\$	1,000
Other	\$	1,500
Sub-Total	\$	<u>8,777</u>

Indirect Operating Costs:

Overhead Costs	\$	4,100
Debt Service (5%-20yr.)	\$	58,256
Sub-Total		<u>62,356</u>

Total Operating Costs	\$	<u>71,133</u>
-----------------------	----	---------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-in-Aid-of-Construction	\$	-
Grants & Other	\$	

11. Source of Funds:

		Source			
	<u>Need</u>	<u>Oper. Revenues</u>	<u>Borrowing</u>	<u>Assess., Contr.-in-Aid</u>	<u>Reserves</u>
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$ 120,000	\$	\$ 120,000	\$	\$

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-38
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. **Proposal Title:** Water System Operational & Energy Efficiency Upgrades

2. **Location:** UMT/LMT

3. **Description:**

This project reserves funding for the installation of Variable Frequency Drive (VFD) units and if needed energy efficient motors, primarily for double pumping facilities at four well stations in the CLD and seven others in the satellite water systems. Associated SCADA hardware and programming is included for the CLD facilities and a pump motor replacement.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

VFD units will allow pump motors to be run at variable speeds on an as needed basis that is more efficient than the current full-on or off control. In addition, the current practice of manually throttling down valves to limit pump output, which creates maintenance issues and wastes energy will be eliminated with VFD control.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	(20)
Personnel Services	\$ (437)
Supplies & Equipment	\$ (1,000)
Maintenance Svcs	\$
Other	\$ (8,500)
Sub-Total	\$ (9,937)

8. **Estimated Costs:**

Engineering (Staff)	\$ 35,000
Land Acquisition	\$
Construction/Equip.	\$ 210,000
Professional Services	\$ 70,000
Other (Labor)	\$ 25,000
Contingencies	\$ 45,000
Total Project Cost	\$ 385,000

Indirect Operating Costs:	
Overhead Costs	\$ (787)
Debt Service (5%-20yr.)	\$ 30,893
Sub-Total	30,107

Total Operating Costs	\$ 20,170
-----------------------	-----------

Requested in this Capital Program	\$ 385,000
-----------------------------------	------------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$
Grants & Other	\$ -

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 100,000	\$	\$ 100,000	\$	\$
2nd Year	\$ 150,000	\$	\$ 150,000	\$	\$
3rd Year	\$ 135,000	\$	\$ 135,000	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-44
 Preparer: ELH

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. **Proposal Title:** Lynn Water Company Improvements

2. **Location:** Lynn Twp

3. **Description:** The project consists of installing customer metering equipment and well station upgrades consisting of telemetry monitoring equipment, security features, pressure tanks and new distribution pumps with VFD controllers. Everything except the new distribution pumps with VFD controllers was completed in prior years.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The LWC acquired by LCA in July 2010 provides water service to 116 customers with the potential of 76 additional customers from an approved adjacent subdivision. The planned improvements will provide a higher level of service, reliability and allow for accurate billing.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ -

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	
Personnel Services	\$
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. **Estimated Costs:**

Engineering (Staff)	\$	32,000
Land Acquisition	\$	
Construction/Equip.	\$	76,000
Professional Services	\$	7,500
Other (Permit)	\$	1,000
Contingencies	\$	7,500
Total Project Cost	\$	124,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 9,950
Sub-Total	\$ 9,950

Total Operating Costs	\$ 9,950
-----------------------	----------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

	Need	Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 44,000	\$	\$ 44,000	\$	\$
1st Year	\$ 80,000	\$	\$ 80,000	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-45
 Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Water System Hydraulic Model **2. Location:** CLD, NWD

3. Description:
 Develop a calibrated all-pipe, hydraulic model of the Central Lehigh Division (CLD) and North Whitehall Division (NWD) water systems. The models will assist in evaluating the impact of larger users and fire flows in both systems, in evaluating an Allentown supply on the CLD system, and to plan for the orderly staging of improvements in the two systems to meet projected needs through the year 2040.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 The existing water model cannot be further expanded. Newer models provide a dynamic, detailed description of the system that can be integrated with LCA's MUNIS, SCADA and GIS systems to utilize current data and to provide enhanced graphical output of display for analysis and planning purposes. The CLD model was completed in the prior years of the project. The NWD model will be completed in the second project year. After completing additional training in use of the CLD model, more of the NWD modeling may be attempted in-house.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	\$	
Personnel Services	\$	
Supplies & Equipment	\$	
Maintenance Services	\$	
Other	\$	
Sub-Total	\$	-

8. Estimated Costs:

Engineering (Staff)	\$	96,000
Land Acquisition	\$	
Software	\$	13,000
Professional Services	\$	161,000
Other (Misc.)	\$	7,000
Contingencies	\$	7,000
Total Project Cost	\$	284,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 16,698
Sub-Total	\$ 16,698
Total Operating Costs	\$ 16,698

Requested in this
 Capital Program \$ 75,900

10. Revenue Impact:

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

11. Source of Funds:

			Source			
	Need		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 208,100	\$		\$ 208,100	\$	\$
1st Year	\$	\$		\$	\$	\$
2nd Year	\$ 75,900	\$		\$	\$	\$ 75,900
3rd Year	\$	\$		\$	\$	\$
4th Year	\$	\$		\$	\$	\$
5th Year	\$	\$		\$	\$	\$
6th thru 10th Years	\$	\$		\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-46
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. **Proposal Title:** LCA/ Borough of Macungie Emergency Interconnection 2. **Location:** CLD

3. **Description:** The project consists of approximately ~100 l.f of 8" diameter water main and concrete meter vault containing a two-way meter, pressure reducing /sustaining valve and associated valves and piping.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 Inter-municipal two-way water system emergency interconnections provide added reliability of varying degrees to both systems in the event of a catastrophic event or a short term supply deficiency. In addition, the LCA Strategic Plan promotes interconnection with neighboring water system within one-half mile.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ -

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./((Decr.))**
 Add. Personnel Man-Hrs. 10
 Personnel Services \$ 219
 Supplies & Equipment \$
 Maintenance Svcs \$
 Other \$
 Sub-Total \$ 219

8. **Estimated Costs:**
 Engineering (Staff) \$ 17,000
 Land Acquisition \$ -
 Construction/Equip. \$ 77,000
 Professional Services \$ 26,000
 Other (Misc) \$ 5,000
 Contingencies \$ 15,000
 Total Project Cost \$ 140,000

 Requested in this
 Capital Program \$ 140,000

Indirect Operating Costs:
 Overhead Costs \$ 393
 Debt Service (5%-20yr.) \$ 11,234
 Sub-Total 11,627

 Total Operating Costs \$ 11,846

10. **Revenue Impact:**
 Gain/Loss in Annual Revenue \$
 Assessment, Contribution-
 in-Aid-of-Construction \$ -
 Grants & Other \$

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$ 140,000	\$	\$ 140,000	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**
 High _____ Medium _____ Low X Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-47
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. Proposal Title: Regional Ground Water Model- Contribution

2. Location: CLD

3. Description: LCA, the City of Allentown and other municipalities are participating in the DEP Source Water Protection Program. The DEP consultant has developed a regional Ground Water (GW) Model, however there are limited GW monitoring locations and the data is old. Rather than duplicating efforts, it is recommended that LCA make a contribution along with other entities that would benefit from a GW model, to develop and maintain GW monitoring sites for on-going data collection.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 Having access to a accurate GW Model would help entities such as LCA better manage the resource and protect the environment. In addition, the GW Model can be used to determine if the Little Lehigh Creek basin is a Critical Water Planning area. Absent any new information to the contrary, DEP may designate it as such based upon the current information.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$ 5,000
Land Acquisition	\$ -
Construction/Equip.	\$
Professional Services	\$
Other (Contribution)	\$ 100,000
Contingencies	\$
Total Project Cost	\$ 105,000
Requested in this Capital Program	\$ 105,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -
Total Operating Costs	\$ -

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 75,000
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$ 105,000	\$	\$	\$ 75,000	\$ 30,000
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium _____ Low X Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-48
Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. **Proposal Title:** Crestwood-New/Alternate Water Supply

2. **Location:** NWD

3. **Description:** The project consists of approximately 600 lf. of 6-inch diameter water main that will connect to the main NWD system at the intersection of Rt. 873 & Crestwood Drive and extend along Crestwood Drive to the LCA well station. Piping and control valve modifications will be necessary within the well station to control the water supply. The existing wells will be put in a DEP reserve status and will not be used.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
During prolonged periods of hot weather, the capacity of the current well supply line is inadequate 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.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./Decr.)**
Add. Personnel Man-Hrs. \$ -
Personnel Services \$ -
Supplies & Equipment \$ -
Maintenance Svcs \$ -
Other \$ 2,400
Sub-Total \$ 2,400

8. **Estimated Costs:**
Engineering (Staff) \$ 47,000
Land Acquisition \$ 5,500
Construction/Equip. \$ 98,000
Professional Services \$ 8,500
Other (Permits) \$ 2,500
Contingencies \$ 23,000
Total Project Cost \$ 184,500

Requested in this
Capital Program \$ 182,500

Indirect Operating Costs:
Overhead Costs \$ -
Debt Service (5%-20yr.) \$ 14,805
Sub-Total 14,805

Total Operating Costs \$ 17,205

10. **Revenue Impact:**
Gain/Loss in Annual Revenue \$ -
Assessment, Contribution-
in-Aid-of-Construction \$ -
Grants & Other \$ -

11. **Source of Funds:**

		Source			
		Oper.		Assess.,	
		Revenues	Borrowing	Contr.-in-Aid	Reserves
		Need			
Prior Years	\$ 2,000	\$	\$ 2,000	\$	\$
1st Year	\$ 182,500	\$	\$ 182,500	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**
High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-49
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. **Proposal Title:** CLD Auxiliary Pumping Station and Main Extension - Lower to Upper System

2. **Location:** CLD

3. **Description:** The project consists of a pre-packaged 3 pump 2 MGD water booster pump station and approximately 1,600 linear-feet of 12-inch diameter interconnecting main extending from the intersection of Cetronia and Werley Roads. North along Werley, connecting to the existing main near Laurel Field in Upper Macungie Township. It is envisioned that the pump station will be located on a small permanent easement yet to be obtained.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The CLD system is divided into two primary gravity service elevations the upper system (US) and lower systems (LS). Currently water can 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 pump 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.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
0.083 ac. @ \$ 43,560.00 /acre
1500 l.f. @ \$ 15.60 /lin ft.
 Total: \$ 26,998

7. **Status of Land Rights:**

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./Decr.)**

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. **Estimated Costs:**

Engineering (Staff)	\$ 130,000
Land Acquisition	\$ 30,000
Construction/Equip.	\$ 625,000
Professional Services	\$ 55,000
Other (Permits)	\$ 8,500
Contingencies	\$ 105,000
Total Project Cost	\$ 953,500

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 76,511
Sub-Total	\$ 76,511

Total Operating Costs	\$ 76,511
-----------------------	-----------

Requested in this Capital Program	\$ 948,500
-----------------------------------	------------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 5,000	\$	\$ 5,000	\$	\$
1st Year	\$ 125,000	\$	\$ 125,000	\$	\$
2nd Year	\$ 823,500	\$	\$ 823,500	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-50
 Preparer: JP

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 10/14/13

1. **Proposal Title:** Schantz / Minesite Main Extension 2. **Location:** CLD

3. **Description:** Construction of approximately 630 LF. of 12" transmission main from the existing 12" main along Schantz Rd, at Dunkin Donuts, to the existing 12" main in Shuler st, just south of Hamilton blvd..

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The project will complete an important transmission loop which will enhance system performance and reliability. It will also enhance the distribution of water purchased from the city of Allentown.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 1,700 l.f. @ \$ 20.00 /lin ft.
 Total: \$ 34000

7. **Status of Land Rights:**
☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Svcs	\$	-
Other	\$	-
Sub-Total	\$	-

8. **Estimated Costs:**

Engineering (Staff)	\$	37,000
Land Acquisition	\$	8,000
Construction/Equip.	\$	140,000
Professional Services	\$	13,000
Other	\$	
Contingencies	\$	22,000
Total Project Cost	\$	220,000
Requested in this Capital Program	\$	220,000

Indirect Operating Costs:

Overhead Costs	\$	-
Debt Service (5%-20yr.)	\$	17,653
Sub-Total		17,653
Total Operating Costs	\$	17,653

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-in-Aid-of-Construction	\$	
Grants & Other	\$	

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$ 220,000	\$	\$ 220,000	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-51
 Preparer: LMB

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Water Capital

Date: 8/15/13

1. **Proposal Title:** Route 309 Crossing @ Sand Spring Road 2. **Location:** NWD

3. Description:

Construction of approximately 500 LF. of 12" transmission main, from the 'existing 8" main located on PPL property behind 4511 Route 309, to Lehigh Community College property, south of Sand Spring Road,

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

The project will extend water service to the west side of Route 309, leading to the future expansion of the NWD water service area in a highly populated area. At the current time there is an opportunity to cross Pa Route 309 with a significant cost savings as PennDot completed a project in project 2013 that where a casing across RT 309 was installed at LCA's request and expense costing less than in normal circumstances. Now that the PennDot project is complete LCA is allowed to construct the remaining segment of the main extension. extension..

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 450 l.f. @ \$ 20.00 /lin ft.
 Total: \$ 9000

7. Status of Land Rights:

☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$ 30,000
Land Acquisition	\$ 12,000
Construction/Equip.	\$ 123,000
Professional Services	\$ 10,000
Other	\$
Contingencies	\$ 15,000
Total Project Cost	\$ 190,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 15,246
Sub-Total	\$ 15,246

Total Operating Costs	\$ 15,246
-----------------------	-----------

Requested in this Capital Program	\$ 155,000
-----------------------------------	------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 35,000	\$	\$ 35,000	\$	\$
1st Year	\$ 155,000	\$	\$ 155,000	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: W-53
Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Water Capital

Date: 10/10/13

1. **Proposal Title:** Non-Residential Water Meter Replacement Project

2. **Location:** All Systems

3. **Description:** Update compatible non-residential water meters that have not exceeded their useful life to radio read (RR) equipment. Replace non-residential water meters that are 2" and smaller and 15 years and older with new RR type. We recommend that Operations budget to test approximately 21 larger meters to ensure calibration standards. Customers not having proper backflow safeguards would be addressed in a separate retrofit project.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

Approximately 220 newer meters will be upgraded to RR capability and 410 older meters that have reached the end of their useful lives will be replaced with RR compatible equipment. Upgrades to equipment that allows RR will increase meter reading accuracy and efficiency that will allow operators to focus efforts in more technical areas. New meters have a low flow accuracy more than 4 times greater than older meters and accurately cover a wider range of flow.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____ 0

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./ (Decr.)**

Add. Personnel Man-Hrs.	(40)
Personnel Services	\$ (874)
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$
Sub-Total	\$ (874)

8. **Estimated Costs:**

Engineering (Staff)	\$ 85,000
Land Acquisition	\$
Construction/Equip.	\$ 340,000
Professional Services	\$
Other (Misc.)	\$ 3,000
Contingencies	\$ 42,000
Total Project Cost	\$ 470,000

Indirect Operating Costs:

Overhead Costs	\$ (1,573)
Debt Service (1.38%-20yr.)	\$ -
Sub-Total	\$ (1,573)

Total Operating Costs

\$ (2,447)

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 265,000	\$	\$	\$	\$ 265,000
2nd Year	\$ 205,000	\$	\$	\$	\$ 205,000
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

WASTEWATER

**WASTEWATER
10-YEAR CAPITAL PLAN
2014 - 2023**

CAPITAL FINANCING JUSTIFICATION

This Capital Plan includes 13 construction projects, equipment purchases, a wastewater capacity planning and expansion project study, a project for acquisition planning and three investigation/remediation efforts. Capital additions to the wastewater system in this ten-year plan are justified from three revenue sources: user charges, grants and capital recovery fees. Because each wastewater system has its own rate structure, a justification is shown for each system, where applicable. A justification for projects either not specific to a system or for a system to be established as a result of the project, is listed under other projects.

The impact on pertinent wastewater funds from various projects is as follows:

WESTERN LEHIGH INTERCEPTOR SYSTEM

Costs of Projects S-1, S-5, S-10, and S-27 will be funded through a combination of reserves and borrowed funds, which will be minimized through the use of capital recovery fees collected from new customers. The impact of these projects for costs expended through 2015 is estimated to increase rates by 2.7% beginning in 2017. The increase equates to a \$6.03 annual charge to the typical residential customer. It is expected that costs expended for Projects S-3 (Central Lehigh County Wastewater Capacity Planning/Expansion) and S-24 (Signatory I and I Investigation/Remediation) will be totally funded by a combination of capital recovery fees and reserve funds through 2015. Costs incurred thereafter will be borne by users of the system.

LITTLE LEHIGH RELIEF INTERCEPTOR SYSTEM

Projects S-15 and S-23 will be funded through borrowed funds. The impact of this project is estimated to increase rates by \$.08 per thousand gallons or 46.9% beginning in 2017, which equates to a \$6.41 annual charge to the typical residential customer.

COMMON RATE COLLECTOR SYSTEMS

Projects S-6, S-7 and S-17 will be funded through a combination of reserves, capital recovery fees and borrowed funds for the Common Rate systems (Upper Milford, Weisenberg-Point West, Wynnwood Terrace, Heidelberg Heights and Sand Spring). The annual impact of the additional expenditures plus additional operating costs will increase rates by approximately \$62 per EDU by year 2017. In addition, Project S-13 will be constructed only if intervening land along the route is developing to justify the cost of the project. It is assumed that approximately 60% of the project cost will be funded using new connection fees. The project will also eliminate the need for the Sand Spring wastewater treatment plant and should result in operational cost savings.

WESTERN WEISENBERG WASTEWATER SYSTEM

Project S-16 will be funded through a combination of capital recovery fees and borrowed funds. Costs will be borne by users of the system.

**WASTEWATER
10-YEAR CAPITAL PLAN
2014 - 2023**

LCA WASTEWATER PLANT

Reserves are expected to finance the ongoing capital improvements (S-22) to the plant. Project S-26 will be funded through borrowed funds, but energy savings will result in an estimated 6-10 year payback period. Any additional costs will be borne by users of the system.

OTHER PROJECTS

S-9 SEWER COMPANY ACQUISITION

Costs related to investigating and negotiating purchases of sewer systems will be recovered through user charges to systems where LCA provides direct retail service.

S-14 JORDAN CREEK WASTEWATER SYSTEM

This project is currently seeking regulatory approvals. A combination of capital recovery fees and borrowed funds will be used to finance the project. All costs will be borne by users of the system.

S-25 LYNN TOWNSHIP WTP EXPANSION

Potential system growth is the driver for this project but if the housing market remains sluggish, expansion will be deferred until needed. Also, the removal of system I/I may further delay this effort. All costs incurred will be borne by users of the system.

**LEHIGH COUNTY AUTHORITY
2014-2023 CAPITAL PROGRAM
WASTEWATER**

Project #	Name or Title of Proposal	Approvals		Project Cost		This Capital Program							Dept. Priority	Funding (3)
		Stage (1)	Amount	Total Cost	Prior Years' (2)	2014	2015	2016	2017	2018	2019-2023	Total		
S - 5	Mobile Equipment	A	NA	\$ 254,500	\$ -	\$ -	\$ 29,500	\$ 30,500	\$ 31,500	\$ 32,500	\$ 130,500	\$ 254,500	High	Exp
S - 9	Sewer Company Acquisitions	A	NA	600,000	-	60,000	60,000	60,000	60,000	60,000	300,000	600,000	Medium	Exp
S - 10	Other Equipment	A	NA	230,000	-	50,000	20,000	20,000	20,000	20,000	100,000	230,000	High	Exp
S - 22	Wastewater TP Improvements	A	NA	11,200,000	1,400,000	650,000	800,000	800,000	800,000	800,000	5,950,000	9,800,000	High	Exp
	Subtotal Annual			12,284,500	1,400,000	760,000	909,500	910,500	911,500	912,500	6,480,500	10,884,500		
	PREVIOUSLY AUTHORIZED (4)													
S - 1	Western Lehigh Interceptor Rehabilitation	Various	801,000	9,735,000	785,000	500,000	1,000,000	3,000,000	3,000,000	1,450,000	-	8,950,000	Medium	Exp
S - 3	Central Lehigh Valley Wastewater Capacity Planning & Expansion	Various	1,274,298	80,499,500	700,000	500,000	1,050,000	4,000,000	19,000,000	30,857,500	24,392,000	79,799,500	High	PF
S - 7	Wynnewood Terrace Sewer System Improvements	P	141,670	1,182,000	85,000	556,000	50,000	100,000	391,000	-	-	1,097,000	Mandated / High	Exp
S - 14	Jordan Creek Wastewater System Treatment Plant	D	554,300	7,055,000	325,000	100,000	4,000,000	2,630,000	-	-	-	6,730,000	High	PF
S - 16	Western Weisenberg Twp Wastewater Treatment Plant	D, C	3,446,600	3,446,500	2,977,500	469,000	-	-	-	-	-	469,000	High	PF
S - 15	Park Pump Station Renovations & Improvements	Various	280,340	2,257,000	225,000	500,000	1,400,000	132,000	-	-	-	2,032,000	High	Exp
S - 24	Signatory I & Investigation/Remediation Program	Various	3,218,031	10,282,000	3,000,000	1,000,000	1,500,000	1,500,000	2,000,000	645,000	637,000	7,282,000	Mandated	Exp
S - 26	LCA WTP Biogas Energy Related Improvements	Various	1,915,645	5,270,000	1,300,000	600,000	3,370,000	-	-	-	-	3,970,000	High	SS
	Subtotal Previously Authorized			119,727,000	9,397,500	4,225,000	12,370,000	11,362,000	24,391,000	32,952,500	25,029,000	110,329,500		
	PENDING AUTHORIZATION													
S - 4	Buckeye Road Sewer Extension	P		670,000	-	-	-	-	-	-	670,000	670,000	Low	SS
S - 6	Wynnewood Infiltration & Inflow Investigation & Remediation Program	P		675,000	20,000	225,000	200,000	130,000	100,000	-	-	655,000	Medium	Exp
S - 13	Sand Spring Wastewater System Improvements	P		1,220,000	-	-	-	-	150,000	270,000	800,000	1,220,000	Low	Exp
S - 17	Heidelberg Heights Infiltration & Inflow Investigation & Remediation Program	P		527,000	-	-	185,000	180,000	162,000	-	-	527,000	High	Exp
S - 23	Park Pump Station Force Main Upgrade	P		1,190,000	-	25,000	150,000	1,015,000	-	-	-	1,190,000	Medium	Exp
S - 25	Lynn Twp WTP Upgrades & Expansion	P		3,500,000	36,000	750,000	300,000	2,000,000	414,000	-	-	3,464,000	High	PF
S - 27	Spring Creek Pump Station Upgrades	P		281,000	3,000	278,000	-	-	-	-	-	278,000	Medium	Exp
	Subtotal Pending Authorization			8,063,000	59,000	1,278,000	835,000	3,325,000	826,000	270,000	1,470,000	8,004,000		
	Grand Total			\$ 140,074,500	\$ 10,856,500	\$ 6,263,000	\$ 14,114,500	\$ 15,597,500	\$ 26,128,500	\$ 34,135,000	\$ 32,979,500	\$ 129,218,000		

- (1) **A**= Annual Item, **S**= Study/Planning, **D**= Design, **C**= Construction / Implementation, **P**= Pending Approval, **E**= Entire Project Approved
(2) Includes estimate of expenditures through 2012.
(3) **SS**= Self-supporting project, **Exp**= Funded as general system expense, **PF**= Project partially funded from additional revenues and partially funded as a general system expense.
(4) Approved for stages indicated, other stages approval pending
Note: Shading indicates new project or revised project scope.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 1
 Preparer: FJL

DEPARTMENT: Capital Works
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. Proposal Title: Western Lehigh Interceptor Rehabilitation **2. Location:** Lower Macungie Twp.,

3. Description:

The initial work (2007-2008) included cured-in-place structural lining of 3,680 LF of 20-inch diameter ductile iron and 578 LF of 24-inch diameter concrete sewer pipes, and seven cured-in-place point repairs. A project planned to install liner in approximately 18,000 LF of 36" reinforced concrete pipe where internal corrosion may have an impact on the pipe is being evaluated.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

In 2004 we began a program of internal inspections of the main stem of the Western Lehigh Interceptor. Rehabilitation projects reflect our consulting engineer's recommendations which stemmed from the inspections. Defects in reinforced concrete pipe are being repaired with spot liner sections, or by lining the entire manhole run where that is judged more cost-effective. Rehabilitation of the existing interceptor pipe in this area is consistent with all the Authority's alternatives for creating additional treatment capacity.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ 487,600

7. Status of Land Rights:

☒ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Services	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$ 340,000
Land Acquisition	\$ 500,000
Construction/Equipment	\$ 6,900,000
Professional Services	\$ 1,020,000
Other (Labor)	\$
Contingencies	\$ 975,000
Total Project Cost	\$ 9,735,000
Requested in this Capital Program	\$ 8,950,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 213,440
Sub-Total	\$ 213,440
Total Operating Costs	\$ 213,440

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 1,790,070
Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves (A)
Prior Years	\$ 785,000	\$	\$	\$	\$ 785,000
1st Year	\$ 500,000	\$	\$	\$ 133,195	\$ 366,805
2nd Year	\$ 1,000,000	\$	\$	\$ 411,195	\$ 588,805
3rd Year	\$ 3,000,000	\$	\$	\$ 388,780	\$ 2,611,220
4th Year	\$ 3,000,000	\$	\$ 1,638,380	\$ 428,450	\$ 933,170
5th Year	\$ 1,450,000	\$	\$ 1,021,550	\$ 428,450	\$
6th thru 10th Years	\$	\$	\$	\$	\$ -
Beyond 10 Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 3
 Preparer: PLM

DEPARTMENT: ADMINISTRATION
 Sub-Organizational Unit: Wastewater Capital

Date: 8/8/12

1. **Proposal Title:** Central Lehigh County Wastewater Capacity Planning/Expansion 2. **Location:** W. Lehigh Cty Service Area

3. **Description:** 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 KIWWTP from 40 to 44 mgd or converting the LCA WTP 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.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The City of Allentown 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/Infiltration removal, the City of Allentown has 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 customer.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Services	\$	-
Other	\$	-
Sub-Total	\$	-

8. **Estimated Costs:**

Engineering (Staff)	\$	1,150,000
Land Acquisition	\$	-
Construction/Equipment	\$	66,130,000
Professional Services	\$	13,226,000
Other	\$	-
Contingencies	\$	-
Total Project Cost	\$	80,506,000
Requested in this Capital Program	\$	79,799,500

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 5,500,650
Sub-Total	\$ 5,500,650
Total Operating Costs	\$ 5,500,650

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$	-
Assessment, Contribution-in-Aid-of-Construction	\$	7,449,200
Other	\$	-

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves *
Prior Years	\$ 700,000	\$	\$	\$	\$ 700,000
1st Year	\$ 500,000	\$	\$ -	\$ 701,550	\$ (201,550)
2nd Year	\$ 1,050,000	\$	\$	\$ 701,550	\$ 348,450
3rd Year	\$ 4,000,000	\$	\$	\$ 655,285	\$ 3,344,715
4th Year	\$ 19,000,000	\$	\$ 17,995,110	\$ 696,505	\$ 308,385
5th Year	\$ 30,857,500	\$	\$ 30,160,995	\$ 696,505	\$ -
6th thru 10th Years	\$ 24,392,000	\$	\$ 20,394,195	\$ 3,997,805	\$ -

12. **Departmental Priority Rating:**

High ☒ Medium ☐ Low ☐ Legally Mandated ☐

* Wastewater capacity reserves are expected to be \$3,800,000 at year-end 2013.

(A) Estimated Capital recovery fees from new connections.

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 4
Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 7/30/12

1. **Proposal Title:** Buckeye Road Sewer Extension 2. **Location:** Upper Milford Twp

3. **Description:** Construction of 2,600 L.F. of 8" PVC sewer main with appurtenances to serve 28 properties (+/-28 EDU's) along Buckeye Road, adjacent to the Route 29 Corridor.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

Public wastewater service is needed to protect local groundwater from failing on-lot septic systems. This project must be authorized by the Upper Milford Township Supervisors.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**

	ac.	@	/acre
2,500	I.f.	@ \$	20 /lin ft.
Total:		\$	50,000

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	25
Personnel Services	\$ 546
Supplies & Equipment	\$ 100
Maintenance Services	\$ 200
Other	\$ 4,100
Sub-Total	\$ 4,946

8. **Estimated Costs:**

Engineering (Staff)	\$ 107,000
Land Acquisition	\$ 51,000
Construction/Equipment	\$ 349,000
Professional Services	\$ 53,000
Other (allocation)	\$ 54,000
Contingencies	\$ 56,000
Total Project Cost	\$ 670,000

Indirect Operating Costs:	
Overhead Costs	\$ 983
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ 983

Total Operating Costs	\$ 5,930
-----------------------	----------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 670,000
Other	\$

11. **Source of Funds:**

		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$ 670,000	\$	\$	\$ 670,000	\$

12. **Departmental Priority Rating:**

High _____ Medium _____ Low X Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 5
 Preparer: FJL

DEPARTMENT: OPERATIONS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. Proposal Title: Mobile Equipment **2. Location:** N/A

3. Description:

2014		2017	1 Full Size Pick-up Truck
2015	1 Full Size Pick-up Truck	2018	1 Full Size Pick-up Truck
2016	1 Full Size Pick-up Truck	2019-2023	Undefined

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

The pickup trucks are replacements for older equipment which will be traded in.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Services	\$
Other	\$
Sub-Total	\$ -

8. Estimated Costs:

Engineering (Staff)	\$ 2,500
Land Acquisition	\$
Construction/Equipment	\$ 252,000
Professional Services	\$
Other (Labor)	\$
Contingencies	\$
Total Project Cost	\$ 254,500

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -

Total Operating Costs \$ -

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ 27,500
Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ -	\$	\$	\$	\$
2nd Year	\$ 29,500	\$ 26,000	\$	\$ 3,500	\$
3rd Year	\$ 30,500	\$ 27,500	\$	\$ 3,000	\$
4th Year	\$ 31,500	\$ 28,500	\$	\$ 3,000	\$
5th Year	\$ 32,500	\$ 29,500	\$	\$ 3,000	\$
6th thru 10th Years	\$ 130,500	\$ 115,500	\$	\$ 15,000	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-6
 Preparer: LMB

DEPARTMENT: OPERATIONS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. Proposal Title: Wynnewood Infiltration & Inflow Investigation and Remediation

2. Location: NWT

3. Description: Includes flow monitoring, SSES work in areas identified and some funding for remediation measures. The investigatory and planning work ~\$ 175,000 will be amortized over 20 years and paid through the user rates. 80% of the remediation measures ~\$400,000 will be capitalized over 20-years, where the remaining 20% of the remediation measures ~\$100,000 will be amortized over 20 years and paid through the user rates.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 During wet-weather events flows into the WTP exceed permitted capacity. Removal of I&I will re-claim capacity for utilization by potential new customers.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./ (Decr.)
 Add. Personnel Man-Yrs. (60)
 Personnel Services \$ (1,311)
 Supplies & Equipment \$ (50)
 Maintenance Services \$
 Other \$ (50)
 Sub-Total \$ (1,411)

8. Estimated Costs:
 Engineering (Staff) \$ 80,000
 Land Acquisition \$
 Construction/Equipment \$ 340,000
 Professional Services \$ 170,000
 Other (Labor) \$
 Contingencies \$ 85,000
 Total Project Cost \$ 675,000
 Requested in this
 Capital Program \$ 655,000

Indirect Operating Costs:
 Overhead Costs \$ (2,360)
 Debt Service (5%-10yr.) \$ 84,830
 Sub-Total \$ 82,470
 Total Operating Costs \$ 81,059

10. Revenue Impact:
 Gain/Loss in Annual Revenue \$
 Assessment, Contribution-
 in-Aid-of-Construction \$ -
 Other \$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 20,000	\$	\$	\$	\$ 20,000
1st Year	\$ 225,000	\$	\$ 225,000	\$	\$
2nd Year	\$ 200,000	\$	\$ 200,000	\$	\$
3rd Year	\$ 130,000	\$	\$ 130,000	\$	\$
4th Year	\$ 100,000	\$	\$ 100,000	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$
Beyond 10 Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:
 High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 7
Preparer: LMB

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** Wynnewood Terrace Sewer System Improvements 2. **Location:** North Whitehall Twp.

3. Description:

Design and construction of improvements in the existing collection system and at the wastewater treatment plant, acquired in July, 2003. Replacement of the primary pumping station is anticipated for 2014, as is replacement of the existing force main. Additional system improvements, if justified, will be executed in 2015-2017.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

Replacement of the main pumping station is necessary to assure reliability and maintain safety. The force main is to be replaced to minimize the potential for breaks and allow easy access for maintenance.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. Cost of Land Rights:

0.5 ac. @ \$ 10,000 /acre
1 l.f. @ _____ /lin ft.
Total: \$ 10,000

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	
Personnel Services	\$ (100)
Supplies & Equipment	\$
Maintenance Services	\$ (5,000)
Other	\$
Sub-Total	\$ (5,100)

8. Estimated Costs:

Engineering (Staff)	\$ 87,000
Land Acquisition	\$ 10,000
Construction/Equipment	\$ 865,000
Professional Services	\$ 132,000
Other (Labor)	\$
Contingencies	\$ 88,000
Total Project Cost	\$ 1,182,000

Indirect Operating Costs:

Overhead Costs	\$ (153)
Debt Service (5%-20yr.)	\$ 142,070
Sub-Total	\$ 141,917

Total Operating Costs	\$ 136,817
-----------------------	------------

Requested in this Capital Program	\$ 1,097,000
-----------------------------------	--------------

10. Revenue Impact:

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

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 85,000	\$	\$	\$	\$ 85,000
1st Year	\$ 556,000	\$	\$ 556,000	\$	\$
2nd Year	\$ 50,000	\$	\$ 50,000	\$	\$
3rd Year	\$ 100,000	\$	\$ 100,000	\$	\$
4th Year	\$ 391,000	\$	\$ 391,000	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$
Beyond 10 Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-9
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS
 Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** Sewer Company Acquisitions
 2. **Location:**
 3. **Description:** Includes staff involvement and consultant costs in actively pursuing system acquisitions

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 Additional customer growth will provide economies of scale.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**
☒ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./((Decr.))**

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Services	\$
Other	\$
Sub-Total	\$ -

8. **Estimated Costs:**

Engineering (Staff)	\$ 550,000
Land Acquisition	\$
Construction/Equipment	\$
Professional Services	\$ 50,000
Other (Labor)	\$
Contingencies	\$
Total Project Cost	\$ 600,000
Requested in this Capital Program	\$ 600,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -
Total Operating Costs	\$ -

10. **Revenue Impact:**

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

11. **Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$		\$
1st Year	\$ 60,000	\$	\$	\$		\$ 60,000
2nd Year	\$ 60,000	\$	\$	\$		\$ 60,000
3rd Year	\$ 60,000	\$	\$	\$		\$ 60,000
4th Year	\$ 60,000	\$	\$	\$		\$ 60,000
5th Year	\$ 60,000	\$	\$	\$		\$ 60,000
6th thru 10th Years	\$ 300,000	\$	\$	\$		\$ 300,000

12. **Departmental Priority Rating:**

High _____ Medium X Low _____ Legally Mandated _____

Project: S-10
Preparer: FJL

Date: 10/15/13

2. Location: WLI and LLRI , Ph 1

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

5. Status of Proposal:

6. Cost of Land Rights:

7. Status of Land Rights:

9. Annual Oper. Cost Impact: Incr./((Decr.)

8. Estimated Costs:

Indirect Operating Costs:

Total Operating Costs

10. Revenue Impact:

Assessment, Contribution-

11. Source of Funds:

12. Departmental Priority Rating:

54

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 13
Preparer: LMB

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 8/15/13

1. **Proposal Title:** Sand Springs Wastewater System Improvements

2. **Location:** North Whitehall Twp.

3. **Description:**

Construction of a wastewater pumping station at the site of the Sand Spring wastewater treatment plant and approximately 6,200 LF of force main to deliver the wastewater from Sand Spring to the proposed regional Jordan Creek wastewater plant.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

The multi-municipal Northern Lehigh Wastewater Study encourages the use of the central treatment plant, which is proposed to be built at the Kids Peace campus. Existing package-type treatment plants in the Jordan and Coplay Creek basins are to be abandoned when feasible. Approximately 60% of the project costs are expected to be recovered from capital recovery fees charged to new connections.

Note: This Project will move forward only if required for new development.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**

	ac.	@	/acre
6,100	l.f.	@ \$	5 /lin ft.
Total:		\$	30,500

7. **Status of Land Rights:**

☐ Not Yet Acquired
☒ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	(350)
Personnel Services	\$ (7,648)
Supplies & Equipment	\$
Maintenance Services	\$ (11,000)
Other	\$ (9,000)
Sub-Total	\$ (27,648)

8. **Estimated Costs:**

Engineering (Staff)	\$ 100,000
Land Acquisition	\$ 35,000
Construction/Equipment	\$ 765,000
Professional Services	\$ 135,000
Other (Labor)	\$
Contingencies	\$ 185,000
Total Project Cost	\$ 1,220,000

Indirect Operating Costs:

Overhead Costs	\$ (13,766)
Debt Service (5%-20yr.)	\$ 41,320
Sub-Total	\$ 27,555

Total Operating Costs \$ (93)

Requested in this
Capital Program \$ 1,220,000

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution- in-Aid-of-Construction	\$ 705,000
Other	\$

11. **Source of Funds:**

	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$			\$	\$
4th Year	\$ 150,000		150,000	\$	\$
5th Year	\$ 270,000	\$	270,000	\$	\$
6th thru 10th Years	\$ 800,000	\$	95,000	\$ 705,000	\$

12. **Departmental Priority Rating:**

High Medium Low X Legally Mandated

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-14
 Preparer: FJL

DEPARTMENT: Capital Works
Sub-Organizational Unit: Wastewater Capital

Date: 10/13/13

1. Proposal Title: Jordan Creek Wastewater System **2. Location:** North Whitehall Twp.

3. Description:

Acquisition of a site at the KidsPeace campus and construction of a 200,000 gpd wastewater treatment plant, a pumping station and other facilities necessary to provide wastewater service to KidsPeace and other properties in the Jordan Creek watershed.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

The multi-municipal Northern Lehigh Wastewater Study recommends construction of a regional sewer plant in the Jordan Creek watershed to avoid continued proliferation of package-type treatment plants and potential groundwater contamination from the eventual failure of on-lot systems.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

5.1 ac. @ \$ 75,500 /acre
 I.f. @ /lin ft.
 Total: \$ 385,050

7. Status of Land Rights:

☐ Not Yet Acquired
☒ Partly Acquired
☐ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	1,000
Personnel Services	\$ 21,850
Supplies & Equipment	\$ 21,740
Maintenance Services	\$ 48,050
Other (Utilities, Lab Services)	\$ 38,060
Sub-Total	\$ 129,700

8. Estimated Costs:

Engineering (Staff)	\$ 475,000
Land Acquisition	\$ 385,000
Construction/Equip.	\$ 4,535,000
Professional Services	\$ 1,125,000
Permits and Misc.	\$ 40,000
Contingencies	\$ 495,000
Total Project Cost	\$ 7,055,000

Indirect Operating Costs:	
Overhead Costs	\$ 33,431
Debt Service (5%-30yr.)	\$ 371,790
Sub-Total	\$ 405,221

Requested in this Capital Program	\$ <u>6,730,000</u>
-----------------------------------	---------------------

Total Operating Costs	\$ <u>534,921</u>
-----------------------	-------------------

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ 2,180,140
Other	\$

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
Prior Years	\$ 325,000	\$	\$ 325,000	\$	\$
1st Year	\$ 100,000	\$	\$ 100,000	\$	\$
2nd Year	\$ 4,000,000	\$	\$ 4,000,000	\$	\$
3rd Year	\$ 2,630,000	\$	\$ 1,290,280	\$ 1,339,720	\$ -
4th Year	\$	\$	\$	\$ 120,060	\$
5th Year	\$	\$	\$	\$ 120,060	\$
6th thru 10th Years	\$	\$	\$	\$ 600,300	\$
Beyond 10 Years	\$	\$	\$	\$ 3,001,500	\$

12. Departmental Priority Rating:

High X Medium Low Legally Mandated

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 15
 Preparer: LMB

DEPARTMENT: CAPITAL WORKS / OPERATIONS
Sub-Organizational Unit: Wastewater Capital

Date: 8/27/13

1. Proposal Title: Park Pump Station Renovations & Improvements **2. Location:** City of Allentown

3. Description:

The facility is in need of infrastructure repairs, improvements and upgrades. Among the items included is a full SCADA upgrade to allow remote operation of the facility, completing installation of a new fuel storage tank, replacing the influent sluice gate and hydraulic operator, upgrade to VFD pump motor control, possibly replacing the 400 HP pump motors, the recently completed comminutor replacement and numerous other small items.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

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. The improvements are needed to keep the facility viable into the foreseeable future most and will enhance the operating capabilities after 24 years of being in service.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____ -

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	(100)
Personnel Services	\$ (2,185)
Supplies & Equipment	\$
Maintenance Services	\$
Other	\$ (13,000)
Sub-Total	\$ (15,185)

8. Estimated Costs:

Engineering (CW& OP)	\$ 155,000
Land Acquisition	\$ -
Construction/Equipment	\$ 1,480,000
Professional Services	\$ 300,000
Other	\$ 12,000
Contingencies	\$ 310,000
Total Project Cost	\$ 2,257,000

Requested in this Capital Program	\$ 2,032,000
-----------------------------------	--------------

Indirect Operating Costs:	
Overhead Costs	\$ (3,933)
Debt Service (5%-20yr.)	\$ 163,050
Sub-Total	\$ 159,117
Total Operating Costs	\$ 143,932

10. Revenue Impact:

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

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 225,000	\$	\$	\$	\$ 225,000
1st Year	\$ 500,000	\$	\$ 500,000	\$	\$
2nd Year	\$ 1,400,000	\$	\$ 1,400,000	\$	\$
3rd Year	\$ 132,000	\$	\$ 132,000	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 17
 Preparer: LMB

DEPARTMENT: Capital
 Sub-Organizational Unit: Wastewater Capital

Date: 8/23/13

1. **Proposal Title:** Heidelberg Heights Infiltration & Inflow Investigation and Remediation. 2. **Location:** Heidleberg Twp

3. **Description:** Includes flow monitoring, SSES work in areas identified and some funding for remediation measures. The investigatory and planning work ~ \$115,000 will be amortized over 20 years and paid through the user rates. 80% of the remediation measures ~\$338,000 will be capitalized over 20-years, where remaining 20% of the remediation measures ~\$84,000 will be amortized over 20 years and paid through the user rates.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 During wet-weather events, flows into the WTP are 3 to 4 times the plants capacity causing operation problems.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**
 Add. Personnel Man-Hrs. (100)
 Personnel Services \$ (2,185)
 Supplies & Equipment \$ (150)
 Maintenance Services \$
 Other \$ (100)
 Sub-Total \$ (2,435)

8. **Estimated Costs:**
 Engineering (Staff) \$ 60,000
 Land Acquisition \$
 Construction/Equipment \$ 273,000
 Professional Services \$ 136,000
 Other (Labor) \$
 Contingencies \$ 68,000
 Total Project Cost \$ 537,000

 Requested in this
 Capital Program \$ 527,000

Indirect Operating Costs:
 Overhead Costs \$ (3,933)
 Debt Service (5%-10yr.) \$ 68,250
 Sub-Total \$ 64,317

 Total Operating Costs \$ 61,882

10. **Revenue Impact:**
 Gain/Loss in Annual Revenue \$
 Assessment, Contribution-
 in-Aid-of-Construction \$ -
 Other \$

11. **Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$		\$
1st Year	\$	\$	\$	\$		\$
2nd Year	\$ 185,000	\$	\$ 185,000	\$		\$
3rd Year	\$ 180,000	\$	\$ 180,000	\$		\$
4th Year	\$ 162,000	\$	\$ 162,000	\$		\$
5th Year	\$	\$	\$	\$		\$
6th thru 10th Years	\$	\$	\$	\$		\$

12. **Departmental Priority Rating:**
 High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S - 16
 Preparer: LBM

DEPARTMENT: Capital Works
Sub-Organizational Unit: Wastewater Capital

Date: 10/28/13

1. Proposal Title: Western Weisenberg Twp. Sewer WWTP **2. Location:** Arcadia West, Weis. Twp.

3. Description: A 40,000 gpd wastewater treatment plant is proposed to be built at Arcadia West to replace the existing plant. The new plant will serve the Arcadia west Industrial Park and other properties in the new Smithville area of Weisenberg Township. 30% of the plants capacity will be allocated to the West Hills Business Center, a proposed industrial park. In turn, the West Hills developer will contribute 30% of the capital cost.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):
 The existing treatment plant at Arcadia West IP is inadequate to treat the wastewater from the properties in that development, which is only 2/3 occupied. The plant would need to be expanded to admit flows from other properties where the township supervisors have approved public sewer service. Partnering with a developer to replace the existing plant is the best way to establish reliable wastewater treatment for the area.

5. Status of Proposal:
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. Status of Land Rights:
☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./(Decr.)

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Services	\$	15,919
Other (Utilities)	\$	9,599
Sub-Total	\$	25,518

8. Estimated Costs:

Engineering (Staff)	\$	275,100
Land Acquisition	\$	-
Construction/Equipment	\$	2,529,000
Professional Services	\$	436,900
Other	\$	79,500
Contingencies	\$	126,000
Total Project Cost	\$	3,446,500

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (1.5%-20yr.)	\$ 187,710
Sub-Total	\$ 187,710

Total Operating Costs \$ 213,228

10. Revenue Impact:

Gain/Loss in Annual Revenue	\$	466,552
Assessment, Contribution-		
in-Aid-of-Construction	\$	2,659,000
Other	\$	

11. Source of Funds:

Source of Funds:		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
	Need				
Prior Years	\$ 2,977,500	\$	\$ 824,000	\$ 195,000	\$
1st Year	\$ 469,000	\$	\$ 2,398,800	\$ 28,700	\$
2nd Year	\$	\$	\$	\$ 388,700	\$
3rd Year	\$	\$	\$	\$ 283,700	\$
4th Year	\$	\$	\$	\$ 368,700	\$
5th Year	\$	\$	\$	\$ 28,700	\$
6th thru 10th Years	\$	\$	\$	\$ 143,500	\$
Beyond 10 Years	\$	\$	\$	\$ 1,222,000	\$

12. Departmental Priority Rating:

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-22
 Preparer: PLM

DEPARTMENT: Operations
 Sub-Organizational Unit: Wastewater Capital

Date: 10/13/13

1. **Proposal Title:** Wastewater Treatment Plant Improvements

2. **Location:** UMT

3. **Description:** This capital project is a comprehensive phased multi-year program to address the continued reliability and functionality of the LCA Wastewater Treatment Plant. Program components include addressing the cyrogenic system, aeration units, HVAC, anaerobic digestion system, headwork's, dewatering systems, odor control and facility structures, such as roofs and doors. The program also includes studies of instrumentation and control.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 Capital improvements for the facility have been underfunded for years. The lack of expenditures, the corrosive environment, the 24/7 operation since 1990; all necessitate repairs, replacements and upgrades throughout the facility. The Capital Plan endeavors to re-establish the reliability and structural integrity of the physical plant, unit processes and components of both.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
 _____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$ -
Maintenance Services	\$ -
Other	\$ -
Sub-Total	\$ -

8. **Estimated Costs:**

Engineering (Staff)	\$	400,000
Land Acquisition	\$	
Construction/Equipment	\$	8,700,000
Professional Services	\$	1,000,000
Other (Labor)	\$	
Contingencies	\$	1,100,000
Total Project Cost	\$	11,200,000
Requested in this Capital Program	\$	9,800,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ -
Sub-Total	\$ -
Total Operating Costs	\$ -

10. **Revenue Impact:**

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

11. **Source of Funds:**

		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves*
		Need			
Prior Years	\$	1,400,000	\$	\$	\$ 1,400,000
1st Year	\$	650,000	\$	\$	\$ 650,000
2nd Year	\$	800,000	\$	\$	\$ 800,000
3rd Year	\$	800,000	\$	\$	\$ 800,000
4th Year	\$	800,000	\$	\$	\$ 800,000
5th Year	\$	800,000	\$	\$	\$ 800,000
6th thru 10th Years	\$	5,950,000	\$	\$	\$ 3,705,000

12. **Departmental Priority Rating:**

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-23
 Preparer: FJL

DEPARTMENT: Capital Works
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. Proposal Title: Park PS Force Main Upgrade

2. Location: City of Allentown

3. Description:

The project consists of : Year 1 - using the new interceptor hydraulic model in a study to determine the future design capacity for the Park Pumping Station; Year 2 - installing a parallel 24" force main for the initial 2,300 linear feet downstream of the Park Pumping Station (assumes that this project continues to be needed after the study). Future work will be planned and constructed as the needs require.

4. Justification (need, function, selection of time, specific relationship to any long-term work program):

The Park Pumping Station currently discharges approximately 20 MGD, but was designed with a capacity of 24 MGD. The first section of the discharge force main was planned to be upgraded with the next expansion of pump station capacity to 32 MGD. By accelerating this portion of the project, the pumping station's output will increase, reducing overflows in the Little Lehigh Parkway in the interim.

5. Status of Proposal:

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. Cost of Land Rights:

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ NA

7. Status of Land Rights:

☐ Not Yet Acquired
☐ Partly Acquired
☒ LCA Owned
☐ No Land Involved

9. Annual Oper. Cost Impact: Incr./Decr.)

Add. Personnel Man-Hrs.		
Personnel Services	\$	50
Supplies & Equipment	\$	
Maintenance Services	\$	
Other	\$	
Sub-Total	\$	50

8. Estimated Costs:

Engineering (Staff)	\$	100,000
Land Acquisition	\$	
Construction/Equipment	\$	735,000
Professional Services	\$	175,000
Other (Labor)	\$	
Contingencies	\$	180,000
Total Project Cost	\$	1,190,000

Indirect Operating Costs:

Overhead Costs	\$	77
Debt Service (5%-20yr.)	\$	95,490
Sub-Total	\$	95,567

Total Operating Costs	\$	95,617
-----------------------	----	--------

Requested in this Capital Program	\$	1,190,000
-----------------------------------	----	-----------

10. Revenue Impact:

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

11. Source of Funds:

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 25,000	\$	\$ 25,000	\$	\$
2nd Year	\$ 150,000	\$	\$ 150,000	\$	\$
3rd Year	\$ 1,015,000	\$	\$ 1,015,000	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$
Beyond 10 Years	\$	\$	\$	\$	\$

12. Departmental Priority Rating:

High _____ Medium X Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-24
 Preparer: PLM

DEPARTMENT: Capital Works
 Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** Signatory I & I Investigation/Remediation Program 2. **Location:** LCA & Signatory Systems

3. **Description:** The project includes flow monitoring of the entire LCA system including the Signatory collector systems (completed), additional flow monitoring, SSES work, current and future LOS evaluation, capital improvements plan and remediation measures. The investigatory and planning work (~\$ 3,267,000) will be amortized over 20 years with 60% being paid through user rates and the remainder by reserves. 80% the remediation measures ~\$5,672,000 will be capitalized over 20-years, where remaining 20% of the remediation measures ~\$1,343,000 will be amortized over 20 years and paid through the user rates.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
 The City and all City Signatories are under an EPA Order to eliminate SSOs within the sanitary sewer system. In addition, LCA and the LCA Signatories, are required by DEP to reduce I & I within the system in order to allow new connections. To reduce I & I in the LCA system, I & I investigation is necessary and is the first step in I & I removal. Flow monitoring data will be utilized to locate and quantify I & I, identify SSOs, calculate signatory surcharges, and system modeling. The project also includes WLI System Optimization Project and Future Rehabilitation.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
 _____ l.f. @ _____ /lin ft.
 Total: \$ _____

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./ (Decr.)**

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Services	\$
Other	\$
Sub-Total	\$ -

8. **Estimated Costs:**

Engineering (Staff)	\$ 500,000
Land Acquisition	\$
Construction/Equipment	\$ 6,209,000
Professional Services	\$ 2,770,000
Other (Labor)	\$ 72,000
Contingencies	\$ 731,000
Total Project Cost	\$ 10,282,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 426,790
Sub-Total	\$ 426,790

Total Operating Costs	\$ 426,790
-----------------------	------------

Requested in this Capital Program	\$ 7,282,000
-----------------------------------	--------------

10. **Revenue Impact:**

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

11. **Source of Funds:**

	Need	Source				Reserves (A)
		Oper. Revenues *	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$ 3,000,000	\$ 484,480	\$	\$		\$ 2,515,520
1st Year	\$ 1,000,000	\$ 174,380	\$ 825,620	\$ -	\$	\$ -
2nd Year	\$ 1,500,000	\$ 219,385	\$ 1,280,615	\$ -	\$	\$ -
3rd Year	\$ 1,500,000	\$ 264,380	\$ 1,235,620	\$ -	\$	\$ -
4th Year	\$ 2,000,000	\$ 324,385	\$ 1,675,615	\$ -	\$	\$ -
5th Year	\$ 645,000	\$ 343,730	\$ 301,270	\$ -	\$	\$ -
6th thru 10th Years	\$ 637,000	\$ 1,652,225	\$ -	\$ -	\$	\$ (1,015,225)
Beyond 10 Years	\$	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High X Medium _____ Low _____ Legally Mandated _____

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-25
Preparer: ELH

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** Lynn Township Wastewater Treatment Plant Upgrades & Expansion 2. **Location:** Lynn Twp.
3. **Description:** The Project is envisioned to be executed in two phases; Phase-1 includes disinfection facility and influent chamber upgrades and is expected to be complete in 2014. Phase-2 is the expansion the WTP capacity from 80,000 GPD to 160,000 GPD. The WTP Upgrades & Expansion was designed and permitted by Gannett Fleming the LTSA engineer prior to the LCA acquisition of the system

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
For Phase 1, the upgrades are required to improve WTP operation. For Phase-2, the WTP expansion addressed in the Townships Act 537 Plan is driven by projected growth and system infiltration and inflow (I/I) issues, however we are reevaluating certain assumptions regarding the sizing of the WTP. Timing of the WTP expansion will be dependent upon I/I remediation efforts and growth.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	\$	-
Personnel Services	\$	-
Supplies & Equipment	\$	-
Maintenance Svcs	\$	-
Other	\$	80,000
Sub-Total	\$	80,000

8. **Estimated Costs:**
- | | | |
|-----------------------|----|-----------|
| Engineering (Staff) | \$ | 245,000 |
| Land Acquisition | \$ | |
| Construction/Equip. | \$ | 2,570,000 |
| Professional Services | \$ | 250,000 |
| Other | \$ | |
| Contingencies | \$ | 435,000 |
| Total Project Cost | \$ | 3,500,000 |

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-30yr.)	\$ 227,680
Sub-Total	227,680
Total Operating Costs	\$ 307,680

Requested in this
Capital Program \$ 3,464,000

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution- in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
		Need			
Prior Years	\$	36,000	\$	36,000	\$
1st Year	\$	750,000	\$	750,000	\$
2nd Year	\$	300,000	\$	300,000	\$
3rd Year	\$	2,000,000	\$	2,000,000	\$
4th Year	\$	414,000	\$	414,000	\$
5th Year	\$		\$		\$
6th thru 10th Years	\$		\$		\$

12. **Departmental Priority Rating:**

High ☒ Medium ☐ Low ☐ Legally Mandated ☐

Note: Capital Recovery fees charged to new connections will help to fund the project but are unknown at this time.

check	3,500,000	-	3,500,000	-
-------	-----------	---	-----------	---

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-26
Preparer: FJL

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** LCA WTP- Bio-gas Energy Related Improvements

2. **Location:** LCA TP

3. **Description:** The Project is composed of an energy/bio-gas study completed in 2011 and two phases of energy saving improvements. Phase-1 includes the construction of a Truck Waste Receiving Station (complete by end of 2013) and replacement of the Digester Mixers, will be completed in mid-2014 and will increase biogas production and achieve operational savings. Phase 2 is the construction of a on-site co-generation, heat recovery (CHP) system w/ bio-gas storage, design to start in 2014

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**

The project will utilize the biogas produced at the WTP to generate on-site approximately 75% of the WTP electrical needs. In addition, heat will be recovered from the generator and used to heat the digesters. Finally there will cost saving in other WTP operational areas such as solids disposal and reduced High Purity Oxygen production.

5. **Status of Proposal:**

☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify)

6. **Cost of Land Rights:**

_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____ -

7. **Status of Land Rights:**

☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**

Add. Personnel Man-Hrs.	
Personnel Services	\$ -
Supplies & Equipment	\$
Maintenance Svcs	\$
Other	\$ (879,000)
Sub-Total	\$ (879,000)

8. **Estimated Costs:**

Engineering (Staff)	\$ 250,000
Land Acquisition	\$
Construction/Equip.	\$ 3,740,000
Professional Services	\$ 530,000
Other	\$ 60,000
Contingencies	\$ 690,000
Total Project Cost	\$ 5,270,000

Indirect Operating Costs:

Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 422,878
Sub-Total	\$ 422,878

Total Operating Costs	\$ (456,122)
-----------------------	--------------

Requested in this Capital Program	\$ 3,970,000
-----------------------------------	--------------

10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ -
Grants & Other	\$

11. **Source of Funds:**

		Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 1,300,000	\$	\$ 1,300,000	\$	\$
1st Year	\$ 600,000	\$	\$ 600,000	\$	\$
2nd Year	\$ 3,370,000	\$	\$ 3,370,000	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High ☒ Medium ☐ Low ☐ Legally Mandated ☐

Lehigh County Authority
CAPITAL PROGRAMMING PROJECT DETAIL

Project: S-27
Preparer: LMB

DEPARTMENT: CAPITAL WORKS
Sub-Organizational Unit: Wastewater Capital

Date: 10/15/13

1. **Proposal Title:** Spring Creek Pump Station Upgrades

2. **Location:** Lower Macingie

3. **Description:** The Project includes installing two new motor operators with SCADA control for the 30" weir slide gates. The work includes installation of local, remote and SCADA control. Currently these side gates are manually operated.

4. **Justification (need, function, selection of time, specific relationship to any long-term work program):**
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, we can not access the station when the area floods.

5. **Status of Proposal:**
☒ Preliminary Estimate
☐ Plans and Specs Completed
☐ Other (Specify) _____

6. **Cost of Land Rights:**
_____ ac. @ _____ /acre
_____ l.f. @ _____ /lin ft.
Total: \$ _____

7. **Status of Land Rights:**
☐ Not Yet Acquired
☐ Partly Acquired
☐ LCA Owned
☒ No Land Involved

9. **Annual Oper. Cost Impact: Incr./(Decr.)**
Add. Personnel Man-Hrs. (100)
Personnel Services \$ (2,185)
Supplies & Equipment \$ 5,000
Maintenance Svcs \$ 1,800
Other \$ _____
Sub-Total \$ 4,615

8. **Estimated Costs:**
Engineering (Staff) \$ 36,000
Land Acquisition \$ _____
Construction/Equip. \$ 180,000
Professional Services \$ 36,000
Other \$ _____
Contingencies \$ 32,000
Total Project Cost \$ 284,000

Requested in this
Capital Program \$ 281,000

Indirect Operating Costs:
Overhead Costs \$ (3,933)
Debt Service (5%-20yr.) \$ _____
Sub-Total (3,933)

Total Operating Costs \$ 682

10. **Revenue Impact:**
Gain/Loss in Annual Revenue \$ _____
Assessment, Contribution-
in-Aid-of-Construction \$ 281,000
Grants & Other \$ _____

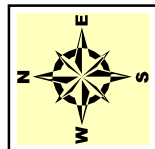
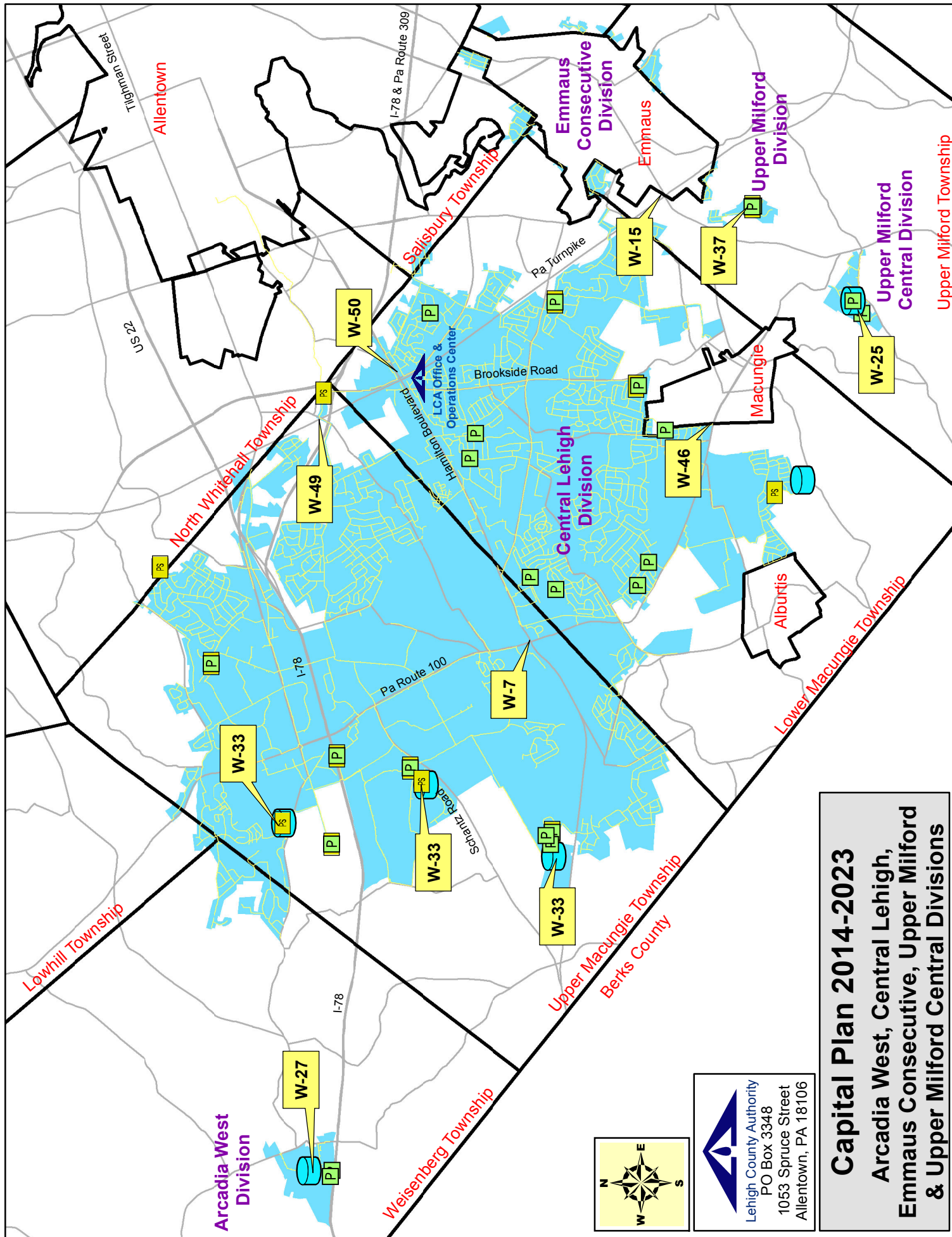
11. **Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)		
Prior Years	\$ 3,000	\$	\$	\$ 3,000		\$
1st Year	\$ 278,000	\$	\$	\$ 278,000		\$
2nd Year	\$	\$	\$	\$		\$
3rd Year	\$	\$	\$	\$		\$
4th Year	\$	\$	\$	\$		\$
5th Year	\$	\$	\$	\$		\$
6th thru 10th Years	\$	\$	\$	\$		\$

12. **Departmental Priority Rating:**
High _____ Medium X Low _____ Legally Mandated _____

(A) Represents use of Western Lehigh Interceptor Capital Recovery fees.

APPENDIX




 Lehigh County Authority
 PO Box 3348
 1053 Spruce Street
 Allentown, PA 18106

Capital Plan 2014-2023
 Arcadia West, Central Lehigh,
 Emmaus Consecutive, Upper Milford
 & Upper Milford Central Divisions

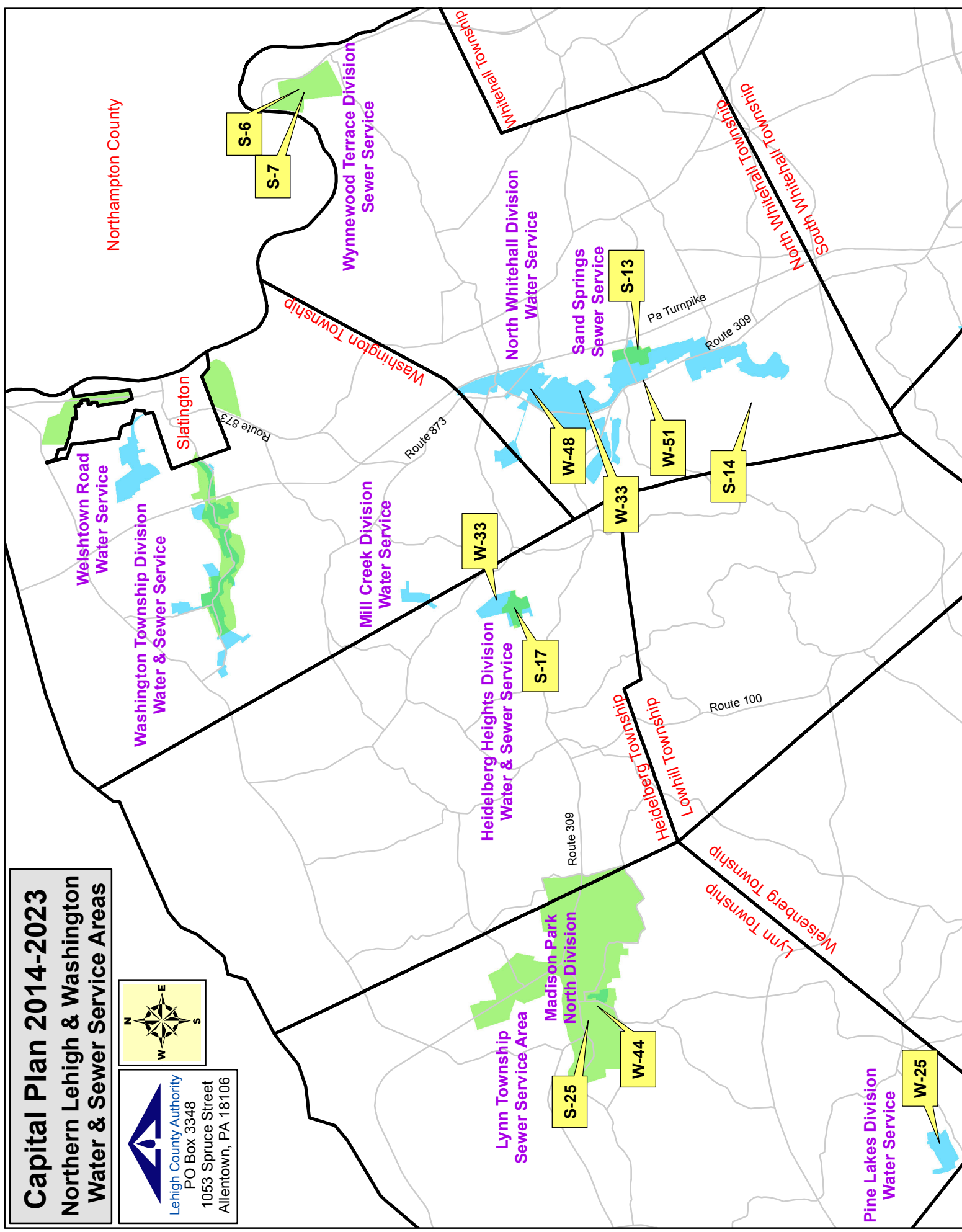
Capital Plan 2014-2023

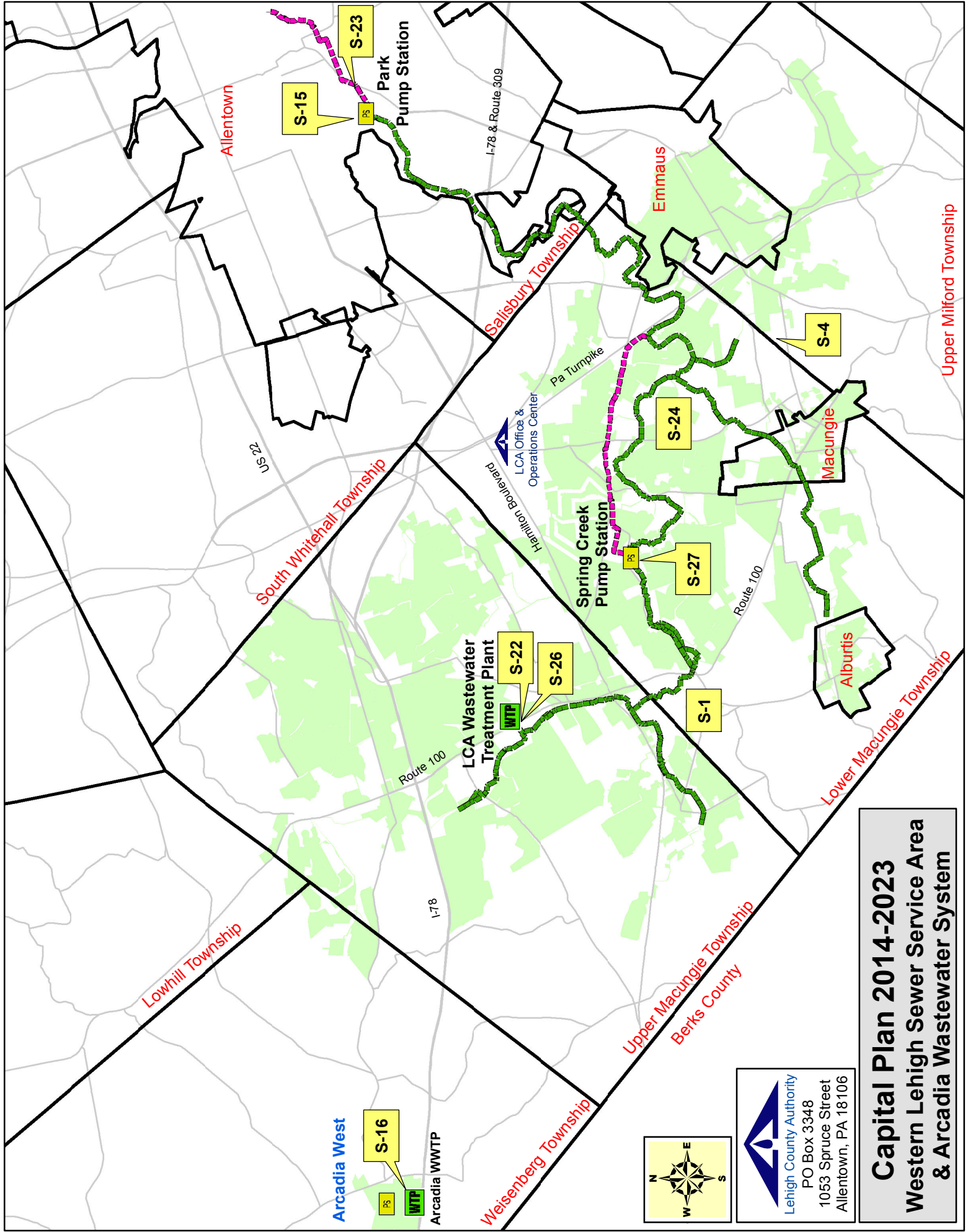
Northern Lehigh & Washington Water & Sewer Service Areas

 **Lehigh County Authority**
PO Box 3348
1053 Spruce Street
Allentown, PA 18106



Northampton County






Lehigh County Authority
PO Box 3348
1053 Spruce Street
Allentown, PA 18106

Capital Plan 2014-2023
Western Lehigh Sewer Service Area
& Arcadia Wastewater System