



## LEHIGH COUNTY AUTHORITY

September 24, 2012

### BOARD MEETING AGENDA

1. Call to Order
2. Review of Agenda
  - *Public Participation Sign-In Request*
3. Executive Sessions
4. Approval of Minutes
  - *August 27, 2012 Regular Meeting Minutes*
5. Public Comments
6. Action / Discussion Items

#### **FINANCE AND ADMINISTRATION**

- *2013-2022 Preliminary Capital Plan (Presentation)*

#### **WATER**

- *None*

#### **WASTEWATER**

- *Wynnewood Terrace Pump Station Replacement (Approval)*

7. System Operations Overview
8. Staff Comments
9. Solicitor's Comments
10. Other Comments
11. Adjournment

#### **OCTOBER MEETINGS**

Workshop Meeting  
Board Meeting

October 8 – 12:00 p.m.  
October 22 – 12:00 p.m.

#### **PUBLIC PARTICIPATION POLICY**

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

## **REGULAR MEETING MINUTES**

### **August 27, 2012**

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The Regular Meeting of the Lehigh County Authority was called to order at 12:25 p.m. on Monday, August 27, 2012, Chairman Asa Hughes presiding. Other Members present at the commencement of the meeting were: Richard Bohner, Norma Cusick, Scott Bieber, and Emrich Stellar. Brian Nagle joined the meeting via telephone, but abstained from all votes as he was unable to hear all details clearly. Authority Staff present were: Aurel Arndt, Joseph McMahon, Frank Leist, Bradford Landon, Liesel Adam, Douglas Young, and Cristin Garger.

Fred Lutz, of ARRO Consulting Engineers, was also in attendance.

#### **REVIEW OF AGENDA**

Mr. Arndt stated the Unaudited Financial Statement will be reviewed after the regular agenda items.

#### **EXECUTIVE SESSION**

Mr. Arndt stated there is potential for an Executive Session regarding personnel and potential real estate acquisition.

#### **PUBLIC COMMENTS**

None.

#### **APPROVAL OF MINUTES**

##### **July 23, 2012 Regular Meeting Minutes**

On a motion by Mr. Bohner, seconded by Ms. Cusick, the Board unanimously approved the minutes of the July 23, 2012 Regular Meeting (5-0).

##### **August 13, 2012 Workshop Meeting Minutes**

On a motion by Mr. Bohner, seconded by Ms. Cusick, the Board unanimously approved the minutes of the August 12, 2012 Workshop Meeting (5-0).

#### **ACTION AND DISCUSSION ITEMS**

##### **Water Capital Recovery Fees – Resolution 8-2012-1 (Approval)**

Mr. Young stated that Water Capital Recovery Fees have not been updated since 2006, with the Arcadia System not having been updated since 2003. He briefly reviewed the changes, noting that 95% of new connections were in the Central Lehigh Division (CLD) and that area will see about a 30% rate increase. Mr. Young also explained that the Arcadia's system costs will be more in line with those of the CLD because there has been more development in that system, which has allowed costs to decrease as they are spread over more customers. He stated that changes will be effective as of October 1, 2012.

On a motion by Mr. Bohner, seconded by Mr. Bieber, the Board unanimously approved Resolution No. 8-2012-1 establishing the various components of the Capital Recovery Fees for the various Authority water systems (5-0).

##### **LCA Wastewater Capacity Program – Act 537 Facilities Planning (Approval)**

Mr. Arndt explained that the Memorandum of Understanding to proceed with a joint Act 537 Plan with the City of Allentown has not yet been signed; however, the City participated in the RFP and proposal review process for this multi-year effort. The Plan work must begin, and if the City decides to participate at a later date, additional work may be added. Mr. Arndt noted that details of the proposal and selection processes are outlined further in the provided memorandum. Based on previous experience with 537 Plans, knowledge of the LCA and City systems, extensive experience with design and evaluations of wastewater plants, and a strong communication plan, the selection team recommends award to ARRO Consulting for

preparation of the Plan. This 537 Plan team provides the advantage of obtaining the high technical experience and qualifications from a strong international consulting firm while keeping the local presence and knowledge of the area. This allows the technical needs of the project to be top notch while keeping the total costs of the project reasonable. Additionally, we recommend the authorization of the Malcolm Pirnie proposal for 537 Plan assistance. Some discussion followed.

On separate motions from Mr. Bieber, seconded by Mr. Stellar, the Board unanimously approved a (1) Capital Project Authorization in the amount of \$835,655 on the first motion, which amount includes the basis of the second motion a (2) Professional Services Authorization for ARRO Consulting not to exceed \$595,655, and that dollars of the third motion, a (3) Professional Services Authorization for Malcolm Pirnie, Inc for On-Call Consulting Services in the amount of \$40,000 ( all three motions 5-0).

Mr. Lutz thanked the Board members for their cooperation on this project, as the many unknowns make it a complex matter.

### **LCA WTP – Digester Mixer Replacement** (Approval)

Mr. Leist explained that based upon the WTP Energy Audit/Bioenergy Recovery Evaluation Study completed in August 2011, the Board authorized the Design Phase for the Truck Waste Receiving Station & Primary Digesters Mixer Replacement Project (Project) at the LCA Wastewater Treatment Plant (WTP) in December 2011. He noted the Construction Phase for the Digester Mixer Replacement is ready to begin. The construction phase includes the installation of six draft tube mixers, previously procured by LCA, two in each of the three digesters and associated piping, valving and control upgrades that will enhance the operational efficiency and flexibility of the digesters. The installation of the mixers will be executed by the contractors one digester at a time, as such two operating digesters will always be maintained to assure adequate treatment capacity. OMI, our WTP contract operator, will be responsible for emptying, cleaning and restarting the digesters as part of their on-going operating contract. While the digesters are empty they will be inspected for defects; however correction of any identified defects is not within the scope of this project and will be handled as an amendment to the Capital Project Authorization. The installation of the mixers is expected to take 280 days to complete. Mr. Leist referred to the memorandum regarding the selection process for this project.

On separate motions by Ms. Cusick, seconded by Mr. Bohner, the Board unanimously approved a (1) Capital Project Authorization Amendment for \$436,600 on the first motion, including the basis of the second, third and fourth motions as follows: (2) Professional Services Authorization for CET, Inc in the amount of \$52,500, a (3) general construction contract award to Heisey Mechanical, Ltd. for \$191,600, and a (4) electrical construction contract award to Thomas L. Hoffman Co., Inc. in the amount of \$54,500 ( all four motions 5-0).

### **Rehabilitation Effectiveness Evaluation** (Approval)

Mr. Leist explained in 2008 the Department of Environmental Protection (DEP) required LCA and the Signatories to generate a Corrective Action Plan for the areas identified as having significant infiltration and inflow (I/I) conditions. In addition, EPA has issued a Compliance Order to the City of Allentown, LCA and all municipalities tributary to the City WWTP to eliminate all SSOs within a five year period (2014). He stated that the LCA 2009-2017 Signatory I/I Investigation & Remediation Project Capital Plan was developed so that LCA could take the lead in working with the Signatories to address the overload and SSO issues. A Sewer Capacity Assurance & Rehabilitation Program (SCARP) Outline was drafted by Malcolm Pirnie that provides a formalized and planned method of evaluating the LCA and Signatory systems, prioritizing and conducting sewer rehabilitation by all the LCA Signatory Partners. Mr. Leist explained this task is for Malcolm Pirnie to determine the reduction in peak flows obtained as a result of the pipe lining projects scheduled for late 2012. Malcolm Pirnie will provide an evaluation of the pre- and post-flow monitoring to determine the effectiveness of the rehabilitation by measuring the amount of I/I eliminated from the system. The evaluation will determine the allocation flow credits attributable to the rehabilitation. The allocation flow credits will be added to the existing allocation flow credit pool for allowing new users to connect to the LCA conveyance system as part of the SCARP program.

On separate motions by Mr. Bieber, seconded by Mr. Stellar, the Board unanimously approved a (1) Capital Project Authorization Amendment in the amount of \$179,000, which amount includes the basis for the second motion: a (2) Professional Services Authorization Amendment for Malcolm Pirnie, Inc. in the amount of \$39,000 (5-0).

### **SYSTEM OPERATIONS OVERVIEW**

Mr. McMahon noted that two boil water advisories were issued in August due to a power outage in the Beverly Hills Division and a main break in Oakland Park.

### **STAFF COMMENTS**

#### **Second Quarter Unaudited Financial Statements (Statements) (Acceptance)**

Mr. Young said the Statements show an 8.5% increase in revenues due to a rate increase, the expansion of industrial users, Coca-Cola and Niagara Bottling, as well as Ocean Spray paid their water system tapping fees for their new location in the LCA service area. He also noted that the City of Allentown Wastewater costs are estimated because no bill was issued from the City through the second quarter; however, a bill was recently received, which increases the protested amount being paid to the City to \$775,000.

Mr. Arndt noted that Coca-Cola contacted the Authority regarding a second production line installation, and the needs of Ocean Spray have increased to approximately 200 gallons per day more of wastewater capacity than anticipated. Both of these cases will result in increased revenue.

On a motion from Mr. Bohner, seconded by Ms. Cusick, the Board unanimously accepted the Second Quarter Unaudited Financial Statements (5-0).

### **SOLICITOR'S COMMENTS**

Mr. Landon had no additional comments.

### **OTHER COMMENTS**

Mr. Hughes commended Staff at the Authority for the efforts put forth to produce the Statement of Qualifications to the City of Allentown regarding the City's proposed water and sewer system concessions. He noted that the document is very professional and highlights the Authority's successes well.

### **EXECUTIVE SESSION**

The Chairman called for an Executive Session at 2:06 p.m. to discuss personnel issues and potential real estate acquisition; at which time, Fred Lutz left the meeting.

The Session ended at 2:30 p.m.

### **ADJOURNMENT**

There being no further business, the Chairman adjourned the meeting at 2:31 p.m.

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Richard H. Bohner  
Secretary

## **FINANCE & ADMINISTRATION**

### **ACTION ITEMS**

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1. ***None.***

### **DISCUSSION ITEMS**

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1. **Preliminary Capital Plan Presentation**

The 2013-2022 Preliminary Capital Plan is attached as a separate document. Please review before the presentation and discussion. The plan will be sent out to various entities and organizations in the area for review and comment; thereafter, a presentation will be made to Lehigh County Commissioners for approval. After County approval, Board approval will be requested.

### **INFORMATION ITEMS**

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1. **Knowledge Sharing Skills Development**

GHD consultants returned for an on-site visit during the week of September 10<sup>th</sup> for 2 days of team workshops and an all-employees meeting to roll out the program to the entire organization. To date, project time has been focused on prioritizing tasks and processes to be captured via Standard Operating Procedures (SOPs) and process maps, and beginning to develop the mentoring and coaching program. An initial group of Operations department employees were engaged to begin developing the first set of SOPs and process maps, which will serve as the basic format for all future work. GHD plans to return to LCA on a bi-weekly basis through November to work on additional SOP development and process mapping within the Operations and Compliance areas.

2. **Pension**

The 2013 Pension Obligation will increase to \$190,996 from \$134,476 in 2012. The primary reason for this increase is a reduction in the surplus credit from \$90,457 to \$43,836. Lower investment income is the driver for the reduction. Despite the changes, LCA's pension fund is still funded at 103%.

3. **Insurance**

LCA has again been recognized as a top performer in the Delaware Valley Worker's Compensation Trust. We were 1 of 3 entities that had no claims in 2011 and received a dividend return of \$5,567, which represents 22.6% of the annual premium.

4. **Recently Purchased Investments – Certificates of Deposit (CDs)**

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
WW Capac	PSDLAF Collateralized CD		735,000.00	8/27/12	8/27/13	0.350
LLRI CR	Goldman Sachs Bank USA	New York, NY	141,000.00	9/5/12	9/5/14	0.900
Cons Wtr (2)	Everbank	Jacksonville, FL	240,000.00	9/14/12	3/14/14	0.500

Fund Descriptions for Investments:

WW Capac	Wastewater Capacity
Cons Wtr (2)	Consolidated Water 2
LLRI CR	Little Lehigh Relief Interceptor Capital Reserves

## **WATER**

### **ACTION ITEMS**

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1. *None.*

### **DISCUSSION ITEMS**

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1. *None.*

### **INFORMATION ITEMS**

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1. **Interconnection with Allentown**

Phase 2 - Connection to City Transmission System at 26<sup>th</sup> and Chew Streets – The final piece of 24" pipe interconnecting the City and LCA systems was laid on August 15. The main has passed hydrostatic testing and has been disinfected. Flushing and bacteriological testing should be completed by the end of the month. Restoration work is ongoing.

DRBC: - On August 3 we submitted a plan to DRBC outlining how we intend to calculate the volume of surface water LCA receives via the interconnection and the volume that is subject to DRBC surface water charges. DRBC is currently reviewing the submittal.

2. **Water Main Relocation Project – Slatedale**

Our water facilities on West Grant Street were successfully relocated in June of 2011. Work on Main Street was completed in May 2012. Staff is assembling costs for presentation to PaDOT in consideration of the cost sharing agreement. Our exposure, by PaDOT Agreement, is about \$25,000.

3. **Water Meter Replacement Project**

Phase 2 - TSE, Inc. has replaced 3,848 out of 3,868 aging meters, radio-read units and backflow preventers through July 11. There were 15 accounts removed from the project where the water has been turned off. This leaves 5 accounts where meters must be upgraded. TSE is also addressing accounts that were identified as incomplete and/or had deficiencies identified in our quality control checks. Substantial completion was issued on June 9, 2012.

4. **Water Main Replacement Project – Oakland Park**

The pre-construction meeting for this project will be held during the week of September 24<sup>th</sup>. Customers in the project area have been notified. Construction is expected to begin in early October.

5. **Arcadia West Pumping Station Modifications**

A meeting was held with T&M on August 24 to review the comments we had on the contract plans and technical specifications for the pumping station improvements and permitting issues. T&M is to provide an opinion of probable construction cost. A revised project schedule was received.

6. **Route 309 Crossing @ Sand Spring Road (formerly @ Education Park Drive)**

Review comments have been received from PaDOT and have been addressed.

7. **Sand Spring Road Waterline Relocation**

Review comments have been received from PaDOT and have been addressed. Staff is preparing documentation for easements acquisitions necessary for the relocation.

8. **Upper Milford Central Division Radon Mitigation Study**

Board authorized this project in June and our consultant (Cowan Associates) is currently evaluating the existing wells in Buss Acres. Final report for this project is expected by the end of the year.

9. **Lehigh County Authority Facilities Emergency Power Capabilities Project**

Board authorized this project in May and our consultant (Hanover Engineering) is currently surveying and preparing all necessary documents for the placement of emergency standby power at each of the 12 satellite facilities in the project. Hanover Engineering has provided a 30% Preliminary Report which is currently being reviewed. Final design and bidding documents for this project is expected by the end of November 2012.

10. **Developments**

Water system construction is occurring at the following developments:

Trexler Fields, Phases 2, 3, 4 & 5 (Partial), 35 residential lots (sfa & sfd), UMT  
Valley West Estates, Phases 4, 5 & 6, 46 residential lots (sfd), UMT *(There has not been any construction activity at this development in over three years.)*

Water system plans are being reviewed for the following developments:

Above & Beyond (personal care facility), 2 commercial lots, UMT  
Diocesan Pastoral Center, 2 commercial lots, 3 additional lots, & residual lot for existing cemetery, LMT  
Grant Street Townes, 18 sfa residential lots, WashT  
Hamilton Crossings, 2 commercial lots with 20 buildings having retail, financial, convenience and restaurant uses, LMT  
Hickory Park Estates, 3 residential lots (sfd), UMT  
Highgate, Phase 3 (Dunbar Tract), 63 sfa & 22 sfd residential lots, UMT  
Hillview Farms, 31 residential lots (sfd), LMT/SWT  
Indian Creek Industrial Park, 6 commercial lots, UMiIT, water and sewer  
Lehigh Hills, 247 residential lots (sfa/sfd), UMT  
Liberty at Mill Creek, 2 industrial lots, UMT  
Morgan Hills, 40 residential lots (sfd), Water & Sewer, WeisT  
North Whitehall Commercial Center (Walmart), 5 commercial lots, NWT, water & sewer  
Parkland Fields (formerly Rabenold Farms I), 205 residential lots (sfd), (Portion south of I-78), UMT  
Rabenold Farms II, 288 apartment units and clubhouse, (Portion north of I-78), UMT  
Route 100 Bypass & Cetronia Road Proposed Commercial Development, 1 commercial lot with 4 buildings having auto, convenience, financial and day care uses, UMT  
Shepherd's Corner, 1 commercial lot, LMT  
Spring Creek Properties Subdivision 1, 14 commercial and industrial lots, LMT  
Trexler Business Center, Lot 1, 1 commercial building, LMT  
Trexler Senior Living Center, 2 commercial lots, LMT *(In bankruptcy)*  
Weilers Road Twins, 82 residential lots (sfa), UMT  
West Hills Business Center, 8 industrial lots, WeisT  
Woodmere Estates, 60 residential units (sfd), UMT

## **WASTEWATER**

### **ACTION ITEMS**

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1. **Wynnewood Terrace Pump Station Replacement** (Approval)

Staff has received and reviewed proposals from eight engineering consulting firms for the replacement of the primary pumping station along Wynnewood Drive in Wynnewood Terrace, North Whitehall Township. Proposals include design, permitting and all regulatory approvals necessary for the construction to be placed to bid. A Capital Project Authorization, including a contract award for professional services will be recommended for approval (**green**).

### **DISCUSSION ITEMS**

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1. ***None.***

### **INFORMATION ITEMS**

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1. **Vera Cruz Area Sewer Project**

Construction was complete in June. To date, PACT has earned \$2,156,341.02 of the initial \$2,332,090.00 contract amount. As of the mid-September, 211 properties, out of 261 to be served, have connected.

The Project Team and PACT have met to discuss closeout documents for the project. PACT is claiming charges for additional work that could exceed \$528,000. However, they have not substantiated their claims in the change order requests filed to date. Staff has directed them to complete the requests and submit with appropriate justification and documented costs. The largest item on their list is the cost of final pavement restoration in PaDOT right of way. Once complete, Change Orders will require Board action for approval.

2. **Infiltration and Inflow (I&I) Program Update**

Several meetings were held with the SCARP Partners to identify potential projects for 2012 that will provide an immediate reduction in the peak wet weather flows. The Partners were in agreement to initiate these “low hanging fruit” projects that may require LCA capital funding but have not committed to the projects at this point.

Areas have been identified as needing CCTV work to determine the extent of the leakage and for determining the basis of rehabilitation. The total footage includes over 57,000 LF of pipe and is located in Upper Macungie Township and Lower Macungie Township with a few segments in Macungie Borough. The CCTV work is expected to be completed in 2012.

The WLI Physical Condition Assessment of the Alburtis/Macungie Branch has been completed. The results and report were presented to LCA in May 22. Malcolm Pirnie is currently reviewing that CCTV work completed on three other areas of the WLI and the LLRI will provide the report later this year. LCA will decide on the method and schedule for rehabilitation of the areas identified through the PCA when the final reports are presented

3. **Wastewater Treatment Capacity**

LCA has not yet received the executed Memo of Understanding (MOU) regarding working together on a joint Act 537 Plan from the City, it has been indicated by City representatives that the document is in the City's Solicitor's office for review. The City representatives participated in the recommendation of the consultant despite not having



an executed MOU. The LCA Board approved the 537 project work at the August Board meeting. A kick-off meeting with the City and LCA 537 Plan team is being scheduled.

Talks with Coplay-Whitehall Sewer Authority and Salisbury Townships may result in the sale and/or lease of allocation. An offer was presented to Salisbury for consideration several months ago and LCA received a counter offer from the Manager from Salisbury. LCA has responded to the counter-offer and is awaiting a response.

#### **4. Northern Lehigh Wastewater System**

The project is proceeding in a number of areas:

##### Wastewater Treatment Plant (on a 5 acre tract at Kids Peace)

In March, LCA representatives met with NWT Supervisor, Steve Panny; Solicitor, Lisa Young; and Township Manager, Jeff Bartlett to discuss the Act 537 Plan. In summary, for the westside of Rt. 309 (the 1-5 year service area) LCA has agreed to limit the size of the WTP to 200,000 GPD which in essence reflects the need for this area. Any expansion beyond 200,000 GPD would require NWT approval. For the eastside of Rt. 309, LCA has agreed to work with NWT in developing a solution for the wastewater treatment needs for this area, which may include one (or more) WTP(s) that discharge to the Coplay Creek. NWT will take lead on this latter effort, with LCA providing support and expertise. After which NWT would amend the Act 537 Plan.

On April 2, 2012 LCA submitted a Conditional Use application which was accepted by NWT. The Planning Commission at their May 22, 2012 meeting recommended the Conditional Use to the Board of Supervisors. The Conditional Use hearing in front of the Board of Supervisors started at the June 4, 2012 meeting was continued to June 12, July 2, July 17, August 6, 2012, August 21 and September 10, 2012, with the hearing concluding at the latter meeting. The law requires the Supervisors render a decision within 45-days from the conclusion of the hearing. Final arguments will be presented on Tuesday, September 18, 2012.

The total cost of the WTP including soft costs and Kids-Peace acquisition costs is estimated at \$4.69 million. We are currently evaluating various Wastewater Treatment Plant options to identify cost savings.

##### Offsite Conveyance Facilities (OSCF)

- a) Wal-Mart has stopped design of the necessary conveyance facilities, which includes gravity sewers, a pump station and force main to deliver the wastewater from their proposed development and other future wastewater customers to the wastewater treatment facilities until a cost sharing agreement is reached with LCA. Wal-Mart has proposed that LCA assume the responsibility of designing, permitting and constructing the OSCF, which is a change from the previous plan where Wal-Mart had the responsibility. Ongoing cost-sharing negotiations are still on hold while Wal-Mart internally reevaluates the proposed store's financial viability.

The construction cost of the conveyance facilities is estimated at \$1.354 million.

##### Kids Peace Agreement

- b) An amendment to the agreement with KidsPeace is being negotiated to reflect the changed circumstances since the original agreement was signed in 2006.

5. **Park Pump Station Improvements**

Fuel Tank Replacement – Staff has received and is reviewing the plans for replacement of the fuel tank at the Park Pump Station. We are in the process of acquiring additional easement area from the COA for the tank. The project is anticipated to go to bid in late 2012.

6. **LCA WTP- Truck Waste Receiving Station**

Truck Waste Receiving Station (TWRS): The project design is underway we expect 90% complete plans by the end of September.

The current schedule anticipates completion of the TWRS in the second quarter of 2013.

Digester Mixer Replacements: The Construction Phase of the project which includes the conditional award of General and Electrical Construction contracts was approved at the August 2012 Board meeting. The contractors have submitted the required Bonds and Insurance which are currently being reviewed. OMI our WTP contract operator has started to drain the contents of first digester to facilitate mixer installation. The Contracts allow 280-days for the mixer installations.

7. **Arcadia West WWTP Improvements**

The three apparent low bidders have submitted the necessary signed agreements, bonds, and insurances, which are under review.

At their July 18 meeting PENNVEST declined to increase the loan amount by \$317,465 to \$3,248,635, to cover the increases in construction contract pricing since the time of the funding application. Loan settlement has been delayed while PennVEST tries to get comfortable with the collateral for the loan being only the revenues from the Western Weisenberg sewer system. Hillwood Development, the developers of the West Hill Business Park, have agreed to prepay its obligation up to \$320,000 to avoid the Authority having to obtain another borrower for the amount not covered previously.



## Lehigh County Authority

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### MEMORANDUM

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**Date:** September 18, 2012

**To:** Board of Directors & Management Staff  
**From:** Lance M. Babbitt  
**Re:** **Primary Pump Station Replacement**  
**Wynnewood Terrace Sewer System**

#### MOTIONS /APPROVALS REQUESTED

No.	Type of Approval	Item	Amount
1	Funding	Capital Project Authorization – Design Phase	\$67,000
2 **	Contract	Professional Services Authorization –Design Phase <ul style="list-style-type: none"><li>• Cowan Associates, Inc</li></ul>	\$33,168

(\*\*) *Included in the Capital Project Authorization*

#### BACKGROUND

Lehigh County Authority acquired the Wynnewood Terrace Sewer System located the northeastern part of North Whitehall Township in July of 2003. The system currently serves 217 residential and 2 commercial customers in the Wynnewood Terrace subdivision in North Whitehall Township. The system includes a 60,000 gpd extended aeration wastewater treatment plant, three wastewater pump stations and 22,500 feet of collector sewers of PVC and cast iron pipe (*see attached map*).

The Primary Pump Station, along Wynnewood Drive, handles all flows for the system and discharges at the Treatment Plant. This pump station dates back to the early operation of the sewer system and, after +25 years of operation, is in need of replacement. Although remaining operable, the station has deteriorated to the point where access and maintenance are extremely hazardous and repair parts are difficult to secure.

#### PROJECT OVERVIEW

Staff proposes to replace the existing Primary Pump Station with a new pump station. This phase of the project involves evaluation of available pump station information, design, permitting and bidding of construction contracts. Pump station design will take into account, both above and below grade options. Additional services are included for system force main evaluation and investigation into the utilization of the existing LCA owned abandoned NBMA water tanks for wastewater equalization and/or sludge holding.

## **CONSULTANT SELECTION**

Staff solicited 15 firms for design and bidding proposals. A mandatory pre-proposal site visit was held. Eight proposals were received on September 14, 2012. A summary of the proposals follows:

Company	Proposal
<b>Cowan Associates:</b>	<b>\$ 33,168</b>
ARRO:	\$ 39,704
KCI Technologies, Inc	\$ 44,959
CET:	\$ 48,480
BIA:	\$ 50,123
Buchart Horn, Inc.:	\$ 55,023
T&M:	\$ 65,420
SSM:	\$ 93,504

Upon review of their technical proposal and the receipt of written clarifications to a few questions that derived from their project scope, we recommend award of the Design Phase this project to Cowan Associates, Inc. in the amount of \$33,168.00.

### **PROJECT SCHEDULE:**

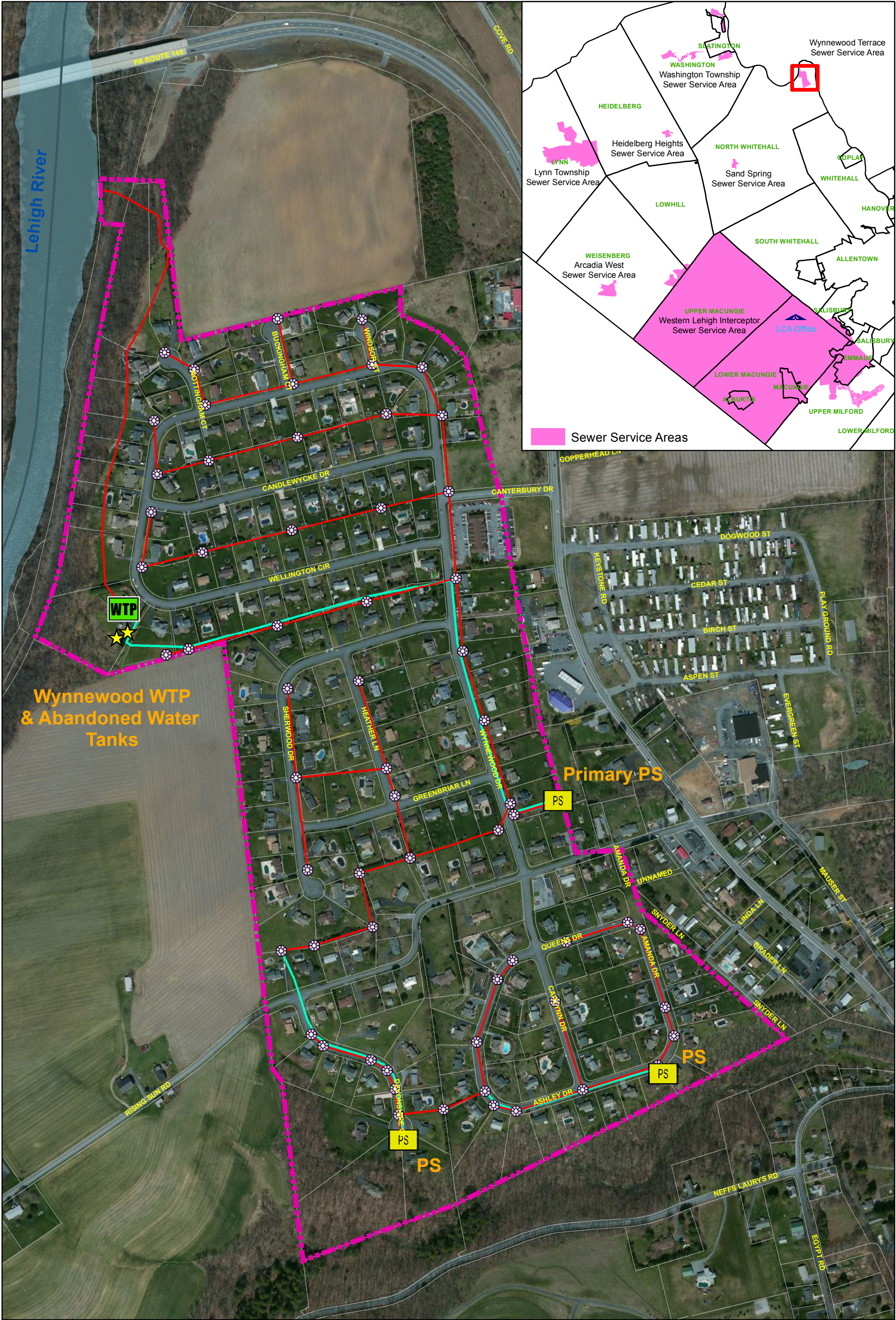
Award Work	September 25, 2012
Kick off Meeting	October 2, 2012
Complete Design	December 12, 2012
Complete Specification	February 1, 2013
Receive Permits	March 1, 2013
Contract Proposals due	April 1, 2013
Start Construction	May 1, 2013
Complete Construction	September 30, 2013
Close Out Project	November 15, 2013

### **FUTURE AUTHORIZATIONS**

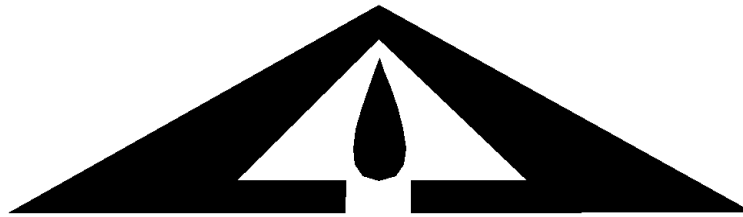
1. Construction Phase - of the Primary Pump Station replacement.
2. If justified, Design and Construction Phases for the utilization of the existing LCA owned abandoned NBMA water tanks for wastewater equalization and/or sludge holding; and/or force main replacement.

CAPITAL PROJECT AUTHORIZATION										
PROJECT NO.:	S-12-1		BUDGET FUND:		WASTEWATER CAPITAL					
PROJECT TITLE:	Primary Pump Station Replacement				PROJECT TYPE:					
	Wynnewood Terrace Sewer System									
					<input type="checkbox"/> Engineering Study <input checked="" type="checkbox"/> Design <input type="checkbox"/> Construction <input type="checkbox"/> Amendment					
This Authorization	\$	67,000								
To Date (w/Above)	\$	67,000								
DESCRIPTION AND BENEFITS										
Replacement of the primary pump station is necessary to assure reliability of service. This phase of the project involves design, permitting and bidding of the construction. Additional evaluation services are included for system force main improvements and investigation into the utilization of the existing abandoned NBMA water tanks for wastewater equalization and/or sludge holding.										
REQUESTED THIS AUTHORIZATION										
Design Phase										
Staff				\$	20,000					
Professional Services					33,500					
Permits					2,500					
Rights-of-Way					4,000					
Miscellaneous					1,000					
Contingency					6,000					
Total This Authorization				\$	67,000					
Future Authorization										
Construction Phase -Primary PS Replacement				\$	401,000					
Total Estimated Project						468,000				
REVIEW AND APPROVALS										
Project Manager			Date		General Manager			Date		
Capital Works Manager			Date		Chairman			Date		









**LEHIGH COUNTY AUTHORITY**

**ALLENTOWN, PA**

**10-YEAR PRELIMINARY CAPITAL PLAN**

**2013 – 2022**

**SEPTEMBER 2012**





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

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**LEHIGH COUNTY AUTHORITY  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**INTRODUCTION**

The following report presents the Lehigh County Authority's 2013 - 2022 Capital Plan, which includes a total of \$150.6 million for capital projects and equipment purchases. The following table reflects comparative amounts between this year's and the prior year capital plans.

	<b><u>2012 – 2021</u></b>	<b><u>2013 – 2022</u></b>
<b>Administration</b>	\$ 1,711,000	\$ 3,807,800
<b>Water</b>	19,930,920	17,688,415
<b>Wastewater</b>	133,746,300	129,005,600
<b>Total</b>	<b>\$ 154,095,620</b>	<b>\$ 150,551,815</b>

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 2012 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  
2013 - 2022**

**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  
2013 - 2022 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)	2013	2014	2015	2016	2017	2018 - 2022	Total		
ANNUAL														
A - 1	Office Equipment / Vehicle Replacement	A	N/A	\$ 125,000	\$ -	\$ -	\$ 50,000	\$ 6,000	\$ -	\$ -	\$ 69,000	125,000	High	Exp
A - 3	Computer System Hardware and Software Upgrades	A	N/A	211,000	-	29,000	34,000	20,000	18,000	25,000	85,000	211,000	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			796,000	-	177,000	164,000	55,000	47,000	54,000	299,000	796,000		
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	393,800	185,000	208,800	-	-	-	-	-	208,800	High	Exp
	Subtotal Previously Authorized		854,684	3,596,800	585,000	602,800	580,000	570,000	450,000	450,000	359,000	3,011,800		
	Grand Total			\$ 4,392,800	\$ 585,000	\$ 779,800	\$ 744,000	\$ 625,000	\$ 497,000	\$ 504,000	\$ 658,000	\$ 3,807,800		

(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:** 8/22/12

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

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

**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
Requested in this Capital Program	\$	125,000

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	\$ 31,250
Grants & Other	\$

**11. Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$	\$	\$
1st Year	\$ -	\$ -	\$	\$	\$	\$
2nd Year	\$ 50,000	\$ 37,500	\$	\$ 12,500	\$	\$
3rd Year	\$ 6,000	\$ 4,500	\$	\$ 1,500	\$	\$
4th Year	\$ -	\$	\$	\$	\$	\$
5th Year	\$ -	\$	\$	\$	\$	\$
6th thru 10th Years	\$ 69,000	\$ 51,750	\$	\$ 17,250	\$	\$

**12. Departmental Priority Rating:**

High X Medium \_\_\_\_\_ Low \_\_\_\_\_ Legally Mandated \_\_\_\_\_

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: A-2  
 Preparer: EFG

**DEPARTMENT:** ADMINISTRATION  
**Sub-Organizational Unit:** Water Capital

**Date:** 8/8/12

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

**2. Location:** Operations Ctr

**3. Description:**

This project builds upon the mobile GIS field application development project that was started in 2011. The initial project included the purchase of hardware and software development as well as personnel training. The mobile application was deployed in 2012 and this project will include the development of additional mobile functionality. Applications to be developed in the first year 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 that is or is not completed.

**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
<b>Total Project Cost</b>	<b>\$ 494,000</b>

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

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

**10. Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ 123,500
Grants & Other	\$

**11. Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid *	Reserves
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 ☒ 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: DY

**DEPARTMENT:** ADMINISTRATION  
**Sub-Organizational Unit:**

**Date:** 7/17/12

**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	\$ 120,000
Vendor Svcs & Software	\$ 91,000
Other	\$ -
Misc. Services	\$ -
Contingencies (15%)	\$ -
Total Project Cost	\$ 211,000
Requested in this Capital Program	\$ 211,000

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	\$ 52,750
Grants & Other	\$ -

**11. Source of Funds:**

		Source			
		Oper.		Assess.,	
		Revenues	Borrowing	Contr.-in-Aid *	Reserves
		Need			
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 29,000	\$ 21,750	\$	\$ 7,250	\$
2nd Year	\$ 34,000	\$ 25,500	\$	\$ 8,500	\$
3rd Year	\$ 20,000	\$ 15,000	\$	\$ 5,000	\$
4th Year	\$ 18,000	\$ 13,500	\$	\$ 4,500	\$
5th Year	\$ 25,000	\$ 18,750	\$	\$ 6,250	\$
6th thru 10th Years	\$ 85,000	\$ 63,750	\$	\$ 21,250	\$

**12. Departmental Priority Rating:**

High ☒ 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-5  
 Preparer: JMc

DEPARTMENT: ADMINISTRATION  
 Sub-Organizational Unit: Water Capital

Date: 8/16/12

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.) \$ 14,636  
 Sub-Total (973)

Total Operating Costs \$ (9,645)

Requested in this  
 Capital Program \$ 460,000

10. **Revenue Impact:**  
 Gain/Loss in Annual Revenue \$  
 Assessment, Contribution-  
 in-Aid-of-Construction \$ 92,000  
 Grants & Other \$

11. **Source of Funds:**

	Need	Source				Reserves
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid		
Prior Years	\$	\$	\$	\$	\$	\$
1st Year	\$ 148,000	\$	\$ 118,400	\$ 29,600	\$	\$
2nd Year	\$ 80,000	\$	\$ 64,000	\$ 16,000	\$	\$
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 borrowings with chargebacks to wastewater funds representing 20% of costs.

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: A-6  
 Preparer: JMc

DEPARTMENT: ADMINISTRATION  
 Sub-Organizational Unit: Water Capital

Date: 8/20/12

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.

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

10. **Revenue Impact:**

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

11. **Source of Funds:**

		Source			
	Need	Oper.	Borrowing	Assess.,	Reserves
		Revenues		Contr.-in-Aid	
Prior Years	\$ 150,000	\$		\$ 37,500	\$ 112,500
1st Year	\$ 300,000	\$		\$ 75,000	\$ 225,000
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 ☒ Medium ☐ Low ☐ Legally Mandated ☐

Lehigh County Authority  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: A-8  
Preparer: LMA

DEPARTMENT: ADMINISTRATION  
Sub-Organizational Unit: Water Capital

Date: 8/17/12

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

**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. Additional benefits expected include increased efficiency and improved internal communications and teamwork.

**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	\$ 159,000
Land Acquisition	\$
Construction/Equip.	\$
Professional Services	\$ 204,800
Other (Labor)	\$
Contingencies	\$ 30,000
Total Project Cost	\$ 393,800

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

Total Operating Costs	\$ -
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**10. Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-	
in-Aid-of-Construction	\$ 97,520
Grants & Other	\$

**11. Source of Funds:**

		Source				
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves	
Prior Years	\$ 185,000	\$	\$ 64,680	\$ 45,320	\$ 75,000	
1st Year	\$ 208,800	\$	\$	\$ 52,200	\$ 156,600	
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 with chargebacks to wastewater funds representing 25% of costs.

**WATER**





**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**CAPITAL FINANCING JUSTIFICATION**

Capital additions to the Water System are justified by using six revenue sources: user charges; assessments or distribution tapping fees; supply tapping fees; contributions-in-aid of construction; reimbursements from the wastewater funds; and grants. 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, reimbursements from wastewater funds and grants as "construction contributions."

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, as determined by 2011 actual consumption, and gross revenue at current rates:

	<u>Usage (gals)</u>	<u>Gross Revenue</u>
MFR – Central Lehigh Division	34,060	\$121
MFR – North Whitehall & Washington Township Divisions	28,250	\$108
3/4" – Central Lehigh Division	60,145	\$177
3/4" – North Whitehall Division	58,440	\$174
3/4" – Washington Township Division	49,940	\$155

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  
2013 - 2022**

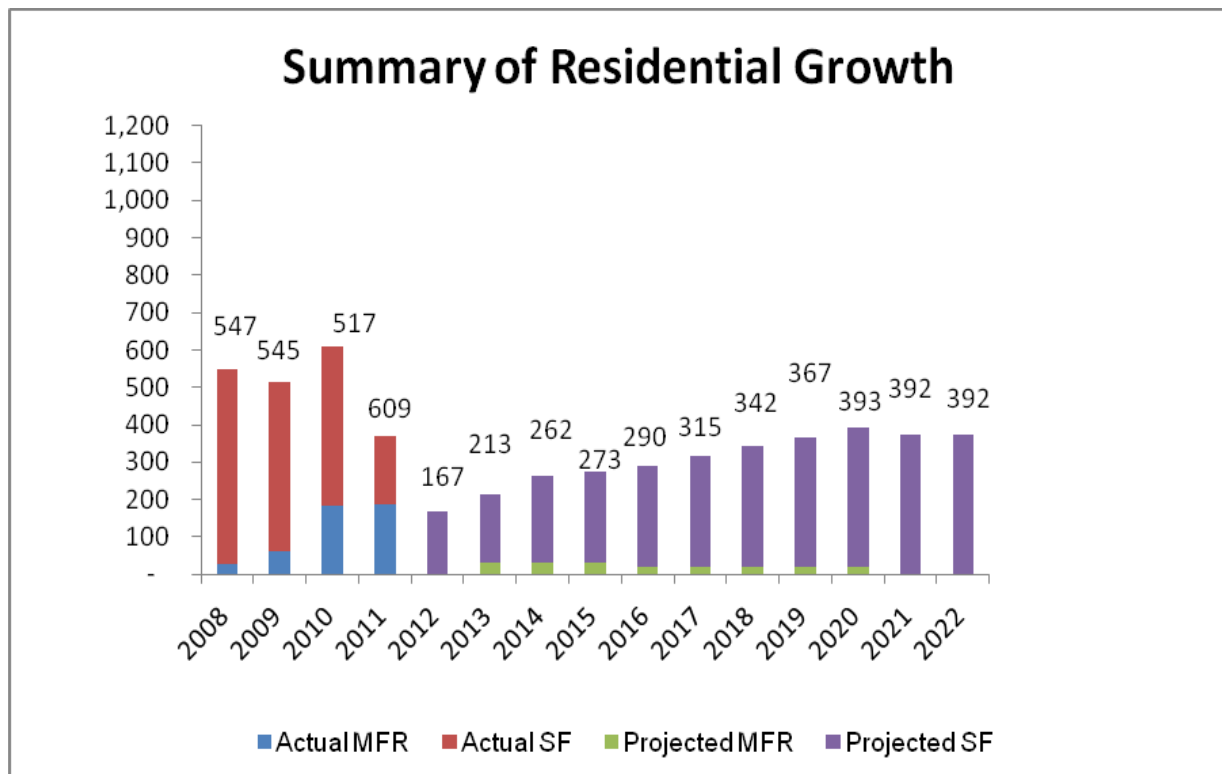
**CAPITAL FINANCING JUSTIFICATION**

**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:



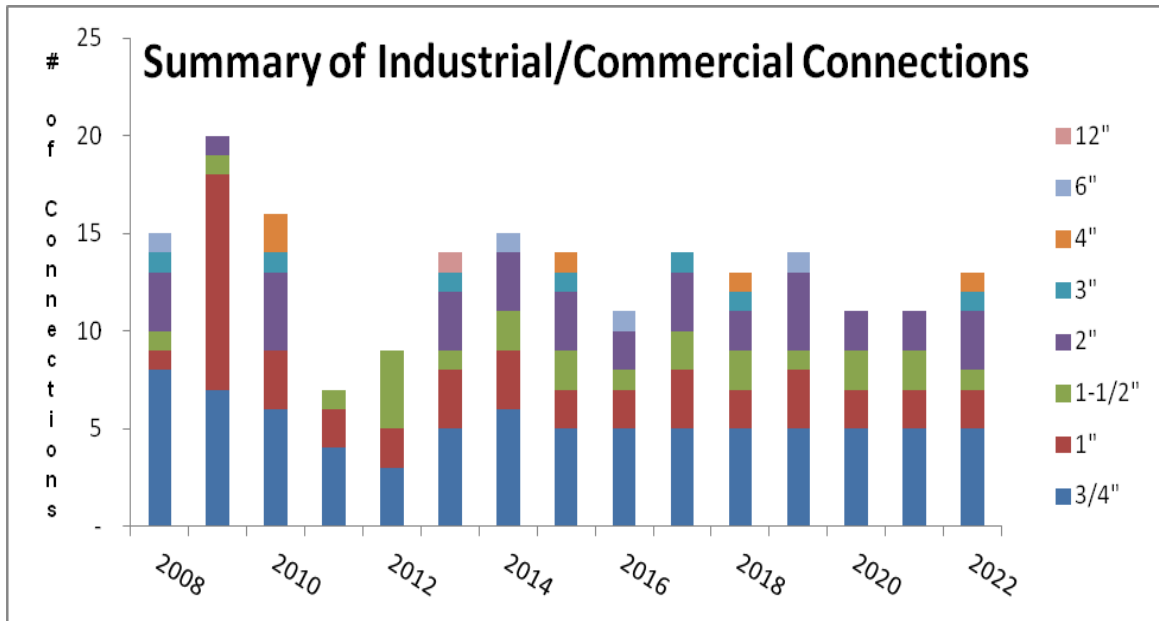
With the housing market downtown, future growth is expected to remain sluggish with modest growth.

**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**CAPITAL FINANCING JUSTIFICATION**

**COMMERCIAL/INDUSTRIAL NEW CONNECTIONS**

Actual connections from 2008 through 2011 and projections for 2012 through 2022 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 .45 million gallons per day (mgd) of water to meet expansion plans and Ocean Spray, which is relocating into the Authority service area, will ultimately need about 1 mgd, beginning in 2013. Also, two water bottlers in the Central Lehigh division are expected to increase water usage by .275 mgd during the next 10 years.

**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**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>
2008	84 (A)	-	-	-	3	2	2	1	1
2009	20	-	-	-	5	2	-	-	-
2010	16	19	-	-	12	3	1	2	-
2011	5	72	-	-	1	2	-	-	-
2012	Est 10	65	-	-	1	2	-	-	-
2013	5	80	1	1	2	2	1	-	-
2014	7	100	-	-	2	2	1	-	-
2015	10	125	1	2	2	1	1	-	-
2016	13	125	-	-	2	3	1	1	-
2017	12	125	1	-	1	1	1	-	-
2018	14	125	-	1	2	2	1	-	-
2019	14	125	1	-	1	1	1	-	-
2020	14	125	-	-	2	2	1	1	-
2021	14	125	1	1	1	1	1	-	-
2022	14	125	-	-	2	2	1	-	-

(A) Includes 38 additional hydrants from Emmaus Consecutive System acquisition

**MISCELLANEOUS REVENUES**

Project W-24 includes additional revenues, which are expected to result from a new water hauling facility.

**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**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>
2008	\$ 420,920	\$ 34,708
2009	459,285	70,970
2010	197,895	15,504
2011	122,935	27,211
2012 Est	180,000	44,000
2013	157,465	20,000
2014	210,155	20,000
2015	201,190	20,000
2016	224,805	25,000
2017	214,905	25,000
2018	244,090	25,000
2019	276,985	25,000
2020	244,170	25,000
2021	269,845	25,000
2022	269,270	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 W-47 and W-51. 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. In addition, project W-4 for Energy Production and Efficiency Study also benefits the wastewater fund and a 35% reimbursement to the Water fund is assumed.

**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**CAPITAL FINANCING JUSTIFICATION**

**PART IV – TOTAL CAPITAL FINANCING JUSTIFICATION**

<u>Capitalized User Charges – Part 1</u>						
<u>Year</u>	<u>Residential &amp; Commercial Connections</u>	<u>Fire Service Revenues</u>	<u>Misc. Revenues</u>	<u>Part II Tapping Fees</u>	<u>Part III Construction Contributions</u>	<u>Total</u>
2013	\$ 1,812,857	\$ 101,926	\$ 60,411	\$ 177,495	\$ 419,245	\$ 2,571,934
2014	4,358,785	161,080	60,411	230,155	476,620	5,287,051
2015	3,090,091	136,979	60,411	221,190	687,910	4,196,581
2016	870,594	203,196	60,411	249,805	342,995	1,727,001
2017	845,724	137,415	60,411	239,905	352,635	1,636,090
2018	930,691	163,069	60,411	269,090	308,978	1,732,239
2019	1,042,913	147,691	60,411	301,985	308,978	1,861,978
2020	890,238	202,430	60,411	269,170	308,978	1,731,227
2021	891,531	144,935	60,411	294,845	308,978	1,700,700
2022	1,063,579	165,825	60,411	294,270	308,978	1,893,063
Total	<u>\$ 15,797,003</u>	<u>\$ 1,564,546</u>	<u>\$ 604,110</u>	<u>\$ 2,547,910</u>	<u>\$ 3,824,295</u>	<u>\$ 24,337,862</u>

**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)	\$35,465,785	
Annual Debt Service		
Including 15% coverage (2012)		\$2,774,120
Estimated Annual Revenue 2012		
Large Industrial	\$ 610,000	
Other Non-Residential	1,925,000	
Residential	3,250,000	
Fire Service	940,000	
Interest Income & Other	55,000	
Rental Income	25,000	
Total Estimated Revenue	\$6,805,000	
Less Estimated Operating Expenses	(2,700,000)	
Total Available for Debt Service		<u>4,105,000</u>
Total Surplus		<u>\$1,330,880</u>

**WATER  
10-YEAR CAPITAL PLAN  
2013 - 2022**

**CAPITAL FINANCING JUSTIFICATION**

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

<u>Issue</u>	<u>Principal Outstanding 12/31/12</u>	<u>Interest Rate</u>
<b><u>Bonds:</u></b>		
2008 Bonds	\$ 10,000,000	3.55 % until 11/1/15, then variable
2010 Series A	11,590,000	3.7584%
2010 Series AA	8,650,000	2.55%
2011 Bonds	1,086,885	2.75%
Subtotal	<u>\$ 31,326,885</u>	
<b><u>Notes:</u></b>		
2007 Pennworks Loan	2,631,155	2%
2011 Pennvest Loan-Meter Replacement Phase 2	<u>1,507,745</u>	1% first 5 yrs, 1.51% next 15 yrs
Subtotal	<u>\$ 4,138,900</u>	
Grand Total	<u>\$ 35,465,785</u>	

We expect to have approximately \$5,200,000 of operating reserves available and an estimated \$5,755,000 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:

<b>Sources of Funds:</b>	
Revenues Justified (Part IV)	\$24,337,862
Available Reserves and Construction Funds	<u>10,955,000</u>
Total Sources	<u>\$35,292,862</u>
<b>Use of Funds:</b>	
Water Capital Costs	\$17,688,415
Projects (A-2 through A-8)	<u>3,682,800</u>
Total Use of Funds	<u>\$21,371,215</u>

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

**LEHIGH COUNTY AUTHORITY  
2013-2022 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)	2013	2014	2015	2016	2017	2018 - 2022	Total		
ANNUAL														
W - 1	New Water Meter Installations	A	NA	\$ 1,476,915	\$ -	\$ 114,715	\$ 125,420	\$ 128,610	\$ 133,195	\$ 145,085	\$ 829,890	\$ 1,476,915	Mandated	PF
W - 2	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 - 3	Distribution Mains - Upsizing	A	NA	960,000	-	50,000	110,000	100,000	100,000	100,000	500,000	960,000	High	Exp
W - 8	Water Company Acquisitions	A	NA	620,000	-	62,000	310,000	62,000	62,000	62,000	310,000	620,000	High	Exp
W - 10	Mobile Equipment	A	NA	699,500	-	29,250	55,250	80,250	100,250	33,250	699,500	699,500	High	Exp
W - 12	Main Replacement Projects	A	Partial-D	2,865,000	825,000	455,000	225,000	225,000	225,000	225,000	685,000	2,040,000	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	1,759,000	-	165,000	168,000	171,000	175,000	180,000	900,000	1,759,000	High	Exp
	Subtotal Annual			10,350,415	825,000	1,035,965	905,670	906,860	975,445	925,335	4,776,140	9,525,415		
PREVIOUSLY AUTHORIZED (4)														
W - 19	Water Facility Emergency Power Capability	Various	303,840	1,137,000	283,000	844,000	10,000	-	-	-	-	854,000	Medium	Exp
W - 44	Lynn Water Company Improvements	Various	75,000	120,000	44,000	76,000	-	-	-	-	-	76,000	High	Exp
W - 27	Arcadia Pump Station Improvements	D	174,000	755,000	120,000	635,000	-	-	-	-	-	635,000	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 Education Park Drive	D	11,900	157,000	12,000	35,000	110,000	-	-	-	-	145,000	Medium	Exp
W - 52	Sand Spring Road Waterline Relocation	D	12,300	70,000	12,000	58,000	-	-	-	-	-	58,000	Medium	PF
	Subtotal Previously Authorized			2,523,000	679,100	1,648,000	195,900	-	-	-	-	1,843,900		
PENDING AUTHORIZATION														
W - 4	Energy Efficiency Study (Water)	P		72,000	-	-	-	40,000	32,000	-	-	72,000	Low	Exp
W - 6	CLD- LCA/COA Driven General System Improvements	P		425,000	-	100,000	150,000	100,000	75,000	-	-	425,000	Medium	SS
W - 7	Trexlestown Transmission Main - Seg 2	P		729,000	18,000	500,000	211,000	-	-	-	-	711,000	Medium	Exp
W - 13	Facility Landscaping and Appearance Improvements	P		178,000	-	25,000	25,000	25,000	25,000	12,000	66,000	178,000	Low	Exp
W - 15	LCA/Borough of Emmaus Interconnection	P		795,000	-	20,000	75,000	700,000	-	-	-	795,000	Medium	PF
W - 18	Water System Master Plan Update	P		285,000	-	140,000	102,000	43,000	-	-	-	285,000	Medium	Exp
W - 24	Water Filling Station	P		318,000	-	60,000	258,000	-	-	-	-	318,000	Low	PF
W - 25	Hydro-Pneumatic Pump Station Upgrades (Pine Lakes of Lynn and Bliss Acres)	P		475,200	-	-	10,000	181,200	284,000	-	-	475,200	High	Exp
W - 37	Additional Water Supply for Upper Millford Division	P		726,000	-	-	120,000	450,000	156,000	-	-	726,000	Medium	Exp
W - 38	Water System Energy Efficiency Upgrades	P		370,000	-	70,000	150,000	150,000	-	-	-	370,000	Medium	Exp
W - 46	LCA/ Borough of Macungie Emergency Interconnection	P		135,000	-	-	-	-	25,000	110,000	-	135,000	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		165,400	17,000	148,400	-	-	-	-	-	148,400	Medium	Exp
W - 49	CLD Auxiliary Pump Station & Main Extension Lower to Upper System	P		918,500	5,000	456,750	456,750	-	-	-	-	913,500	Medium	Exp
W - 50	Schantz Spring/ Minesite Rd Main Extension	P		213,600	8,600	205,000	-	-	-	-	-	205,000	Medium	Exp
W - 53	Non-residential Water Meter Replacement	P		457,000	-	457,000	-	-	-	-	-	457,000	Medium	Exp
	Subtotal Pending Authorization			6,367,700	48,600	2,182,150	1,662,750	1,689,200	597,000	122,000	66,000	6,319,100		
	Grand Total			\$ 19,241,115	\$ 1,552,700	\$ 4,866,115	\$ 2,764,320	\$ 2,596,060	\$ 1,572,445	\$ 1,047,335	\$ 4,842,140	\$ 17,688,415		

- (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: DDY

**DEPARTMENT:** OPERATIONS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/2/12

**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 \$ 1,114,165  
 Professional Services \$ -  
 Other (Labor) \$ 361,795  
 Contingencies \$ -  
 Total Project Cost \$ 1,475,960  
  
 Requested in this  
 Capital Program \$ 1,476,915

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 \$ 1,246,915  
 Grants & Other \$ -

**11. Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ -	\$ -	\$ -	\$ -	\$ -
1st Year	\$ 114,715	\$ -	\$ -	\$ 91,715	\$ 23,000
2nd Year	\$ 125,420	\$ -	\$ -	\$ 102,420	\$ 23,000
3rd Year	\$ 128,610	\$ -	\$ -	\$ 105,610	\$ 23,000
4th Year	\$ 133,195	\$ -	\$ -	\$ 110,195	\$ 23,000
5th Year	\$ 145,085	\$ -	\$ -	\$ 122,085	\$ 23,000
6th thru 10th Years	\$ 829,890	\$ -	\$ -	\$ 714,890	\$ 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: 7/30/12

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

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	\$	1,075,000
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 ☒ 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:** 7/30/12

**1. Proposal Title:** Distribution Mains - Upsizing / Contribution

**2. Location:** Graymoor, Harvest Fields,  
 Schaefer Run Commons, Silvershadows,  
 Valley West Estates, Weilers Road Twins, etc.

**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>960,000</u>
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Indirect Operating Costs:	\$	-
Overhead Costs	\$	-
Debt Service (5%-20yr.)	\$	77,033
Sub-Total	\$	<u>77,033</u>
Total Operating Costs	\$	<u>77,033</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	\$ 50,000	\$	\$ 50,000	\$	\$
2nd Year	\$ 110,000	\$	\$ 110,000	\$	\$
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 - 4  
 Preparer: FJL

**DEPARTMENT:** ADMINISTRATION  
**Sub-Organizational Unit:** Water & Wastewater Capital

**Date:** 9/6/12

**1. Proposal Title:** Energy Production / Efficiency Study

**2. Location:** All Water Systems  
 & LCA WTP

**3. Description:** This Project will evaluate numerous energy related options and will include the potential benefits of utilizing natural gas for heating/cooling and electrical power generation at the LCA Operations Center and as an alternate fuel source for our vehicles. Solar power at the LCA Operations Center and LCA WTP will also be evaluated. Finally energy efficiency evaluations will be conducted at select LCA well stations. When applicable recommendations along with capital costs, anticipated energy production / savings and pay-back analysis will be provided.

**4. Justification (need, function, selection of time, specific relationship to any long-term work program):**  
 Electric power costs represent a large part of the total LCA operating budget. Natural gas prices continue to drop which may make certain energy related cost savings options more attractive. In certain cases, replacing older motors with energy efficient ones and utilizing VFDs may effectively reduce power costs. Solar energy will be evaluated only if it becomes more cost effective.

**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)	\$	18,000
Land Acquisition	\$	-
Construction/Equip.	\$	-
Professional Services	\$	42,000
Other	\$	4,500
Contingencies	\$	7,500
<b>Total Project Cost</b>	<b>\$</b>	<b>72,000</b>

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

Requested in this  
 Capital Program \$ 72,000

**10. Revenue Impact:**

Gain/Loss in Annual Revenue	\$	-
Assessment, Contribution- in-Aid-of-Construction	\$	25,200
Grants & Other	\$	-

**11. Source of Funds:**

		Source			
	Need	Oper.	Assess.,		Reserves
		Revenues *	Borrowing	Contr.-in-Aid	
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 40,000	\$	\$	\$ 14,000	\$ 26,000
2nd Year	\$ 32,000	\$	\$	\$ 11,200	\$ 20,800
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

**12. Departmental Priority Rating:**

High \_\_\_\_\_ Medium \_\_\_\_\_ Low x Legally Mandated \_\_\_\_\_

\* The funding for this project will come initially from water fund reserves with chargebacks to the WTP representing ~35% of costs.

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-6  
 Preparer: LMB

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/26/12

**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):**

After the completion of the COA, Phase 2 efforts, significant flows 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 will 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.
<b>Total:</b>	<b>\$ 33,000</b>

**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	\$
<b>Sub-Total</b>	<b>\$ 5,416</b>

**8. Estimated Costs:**

Engineering (Staff)	\$ 28,000
Land Acquisition	\$ 33,000
Construction/Equip.	\$ 264,000
Professional Services	\$ 68,000
Other (Labor)	\$
Contingencies	\$ 32,000
<b>Total Project Cost</b>	<b>\$ 425,000</b>

Indirect Operating Costs:	
Overhead Costs	\$ 6,148
Debt Service (5%-20yr.)	\$ 34,103
<b>Sub-Total</b>	<b>\$ 40,251</b>

<b>Total Operating Costs</b>	<b>\$ 45,667</b>
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Requested in this Capital Program	\$ 425,000
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**10. Revenue Impact:**

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

**11. Source of Funds:**

		<b>Source</b>			
	<b>Need</b>	<b>Oper. Revenues</b>	<b>Borrowing</b>	<b>Assess., Contr.-in-Aid</b>	<b>Reserves</b>
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 100,000	\$	\$ 100,000	\$	\$
2nd Year	\$ 150,000	\$	\$ 150,000	\$	\$
3rd Year	\$ 100,000	\$	\$ 100,000	\$	\$
4th Year	\$ 75,000	\$	\$ 75,000	\$	\$
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-7  
Preparer: JP

DEPARTMENT: CAPITAL WORKS  
Sub-Organizational Unit: Water Capital

Date: 7/26/12

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) \$ 135,000  
Land Acquisition \$ 34,000  
Construction/Equip. \$ 448,000  
Professional Services \$ 45,000  
Other \$  
Contingencies \$ 67,000  
Total Project Cost \$ 729,000  
  
Requested in this  
Capital Program \$ 711,000

Indirect Operating Costs: 50  
Overhead Costs \$ 410  
Debt Service (5%-20yr.) \$ 58,497  
Sub-Total 58,907  
  
Total Operating Costs \$ 59,434

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	\$ 18,000	\$	\$ 18,000	\$	\$
1st Year	\$ 500,000	\$	\$ 500,000	\$	\$
2nd Year	\$ 211,000	\$	\$ 211,000	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-8  
 Preparer: DDY

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 8/20/12

**1. Proposal Title:** Water Company Acquisitions **2. Location:** L. Mac, U. Mac & N. Whitehall & LynnTwps

**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			
		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 \_\_\_\_\_

Project: W-10  
Preparer: JMc

**Date:** 8/16/12

**2. Location:** N/A

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

### 6. Cost of Land Rights:

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

**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	<u>-</u>

### 10 Gain/Loss in Annual Revenue

Assessment, Contribution- in-Aid-of-Construction	\$	
Grants & Other	\$	69,000
	\$	

## Source

		Oper.	Borrowing	Assess.,	
	Need	Revenues		Contr.-in-Aid*	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 29,250	\$	\$	\$ 3,000	\$ 26,250
2nd Year	\$ 55,250	\$	\$	\$ 6,000	\$ 49,250
3rd Year	\$ 80,250	\$	\$	\$ 4,000	\$ 76,250
4th Year	\$ 100,250	\$	\$	\$ 10,000	\$ 90,250
5th Year	\$ 33,250	\$	\$	\$ 6,000	\$ 27,250
6th thru 10th Years	\$ 401,250	\$	\$	\$ 40,000	\$ 361,250

High	X	Medium	Low	Legally Mandated
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**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-12  
 Preparer: EFG

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 8/9/12

**1. Proposal Title:** Main Replacement Projects **2. Location:** Any Service Area

**3. Description:** Replacement of cast iron (CI) mains in acquired water systems that may experience high failure rates. The first year of this plan includes the replacement of ~850' of CIP in the Clearview Manor Development in Lower Macungie Township and as much as 2000' in the Clearview Farms Development in Moore Township. These are both areas where multiple leaks have occurred in recent years. In the remaining years of this plan, the funding will provide for future projects on an as-needed basis.

**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)

Indirect Operating Costs:

Overhead Costs	\$ (2,049)
Debt Service (5%-20yr.)	\$ 102,711
Sub-Total	100,661

Total Operating Costs \$ 95,673

**8. Estimated Costs:**

Engineering (Staff)	\$ 400,000
Land Acquisition	\$ -
Construction/Equip.	\$ 1,975,000
Professional Services	\$ 115,000
Other (Labor)	\$ -
Contingencies	\$ 375,000
Total Project Cost	\$ 2,865,000

Requested in this  
 Capital Program \$ 2,040,000

**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	\$ 825,000	\$	\$ 825,000	\$	\$
1st Year	\$ 455,000	\$	\$ 455,000	\$	\$
2nd Year	\$ 225,000	\$	\$	\$	\$ 225,000
3rd Year	\$ 225,000	\$	\$	\$	\$ 225,000
4th Year	\$ 225,000	\$	\$	\$	\$ 225,000
5th Year	\$ 225,000	\$	\$	\$	\$ 225,000
6th thru 10th Years	\$ 685,000	\$	\$	\$	\$ 685,000

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-13  
 Preparer: EFG

**DEPARTMENT:** Capital Works / Operations  
**Sub-Organizational Unit:** Water Capital

**Date:** 8/9/12

- 1. Proposal Title:** Facility Landscaping and Appearance Improvements      **2. Location:** CLD & LCA WTP
- 3. Description:** This project will improve the appearance of the LCA WTP as well as various well stations in the CLD through landscaping and minor aesthetic enhancements to the buildings. Estimate is for the WTP to be completed in year one with LCA working in conjunction with the Wildlands Conservancy. The well station improvements will be done starting in year two and four stations per year to be completed annually through year four. The remaining well stations will be completed as needed in years 5-10.
- 4. Justification (need, function, selection of time, specific relationship to any long-term work program):**  
 Improved appearance of Authority facilities will result in an improved public image of the Authority and help to maintain good relations with neighboring property owners.

- 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 \$ 8,750  
 Other \$ -  
 Sub-Total \$ 8,750

**8. Estimated Costs:**

Engineering (Staff)	\$	40,000
Land Acquisition	\$	
Construction/Equip.	\$	85,000
Professional Services	\$	15,000
Other (Labor)	\$	28,000
Contingencies	\$	10,000
Total Project Cost	\$	178,000

Requested in this Capital Program \$ 178,000

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	\$ 25,000	\$	\$	\$	\$
2nd Year	\$ 25,000	\$	\$	\$	\$
3rd Year	\$ 25,000	\$	\$	\$	\$ 21,500
4th Year	\$ 25,000	\$	\$	\$	\$ 21,500
5th Year	\$ 12,000	\$	\$	\$	\$ 21,500
6th thru 10th Years	\$ 66,000	\$	\$	\$	\$ 64,000

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

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-15  
 Preparer: EFG

DEPARTMENT: Capital Works  
 Sub-Organizational Unit: Water Capital

Date: 8/9/12

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	\$ 40,000
Construction/Equip.	\$ 520,000
Professional Services	\$ 60,000
Other (Labor)	\$
Contingencies	\$ 100,000
Total Project Cost	\$ 795,000

Indirect Operating Costs:

Overhead Costs	\$ 393
Debt Service (5%-20yr.)	\$ 31,896
Sub-Total	\$ 32,290

Total Operating Costs	\$ 32,508
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Requested in this Capital Program	\$ 795,000
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10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 397,500
Grants & Other	\$

11. **Source of Funds:**

		<b>Source</b>			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 20,000	\$	\$ 10,000	\$ 10,000	\$
2nd Year	\$ 75,000	\$	\$ 37,500	\$ 37,500	\$
3rd Year	\$ 700,000	\$	\$ 350,000	\$ 350,000	\$
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-18  
 Preparer: ELH

DEPARTMENT: Capital Works  
 Sub-Organizational Unit: Water Capital

Date: 7/30/12

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

Requested in this Capital Program	\$	285,000
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Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 11,234
Sub-Total	\$ 11,234
Total Operating Costs	\$ 11,234

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	\$ 140,000	\$	\$ 140,000	\$	\$	
2nd Year	\$ 102,000	\$	\$	\$	\$	102,000
3rd Year	\$ 43,000	\$	\$	\$	\$	43,000
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-19  
 Preparer: JP

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Water Capital

Date: 8/1/12

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 and at LCA's Office Operations Center. Also, reconfigures 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, to sustain water 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)	\$ 57,000
Land Acquisition	\$
Construction/Equip.	\$ 885,000
Professional Services	\$ 89,000
Other	\$
Contingencies	\$ 106,000
Total Project Cost	\$ 1,137,000

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

Total Operating Costs	\$ 9,159
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Requested in this Capital Program	\$ 854,000
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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	\$ 283,000	\$	\$	\$	\$ 180,000
1st Year	\$ 844,000	\$	\$	\$	\$
2nd Year	\$ 10,000	\$	\$	\$	\$ 190,000
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-24  
 Preparer: LMB

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/26/12

**1. Proposal Title:** Water Filling Station **2. Location:** UMT

**3. Description:** A water filling station with multiple bays will allow water haulers to fill tank trucks.

**4. Justification (need, function, selection of time, specific relationship to any long-term work program):**  
 All water haulers would fill at this facility avoiding damage to hydrants currently designated for use by haulers.  
 Haulers would fill on LCA property at the Wastewater Treatment Plant along Rt 100, and not along public roads.  
 Water Hauler usage would be more closely monitored. The stations cost would be recovered through user fees paid by existing and new haulers.

**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 \$ 1,500  
 Maintenance Svcs \$ 500  
 Other \$ \_\_\_\_\_  
 Sub-Total \$ 4,185

**8. Estimated Costs:**  
 Engineering (Staff) \$ 52,000  
 Land Acquisition \$ \_\_\_\_\_  
 Construction/Equip. \$ 212,000  
 Professional Services \$ 27,000  
 Other (Labor) \$ \_\_\_\_\_  
 Contingencies \$ 27,000  
 Total Project Cost \$ 318,000  
  
 Requested in this  
 Capital Program \$ 318,000

Indirect Operating Costs:  
 Overhead Costs \$ 3,933  
 Debt Service (5%-20yr.) \$ 25,517  
 Sub-Total 29,450  
  
 Total Operating Costs \$ 33,635

**10. Revenue Impact:**  
 Gain/Loss in Annual Revenue \$ 6,925  
 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	\$ 60,000	\$	\$ 60,000	\$	\$
2nd Year	\$ 258,000	\$	\$ 258,000	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$	\$	\$	\$	\$
6th thru 10th Years	\$	\$	\$	\$	\$

**12. Departmental Priority Rating:**

Lehigh County Authority  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-25  
Preparer: ELH

DEPARTMENT: CAPITAL WORKS  
Sub-Organizational Unit: Water Capital

Date: 9/6/12

1. **Proposal Title:** Hydro-Pneumatic Pump Station Upgrades  
(Pine Lakes of Lynn and Upper Milford Central Division)
2. **Location:** PLD, UMCD
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)	\$	71,200
Land Acquisition	\$	
Construction/Equip.	\$	250,300
Professional Services	\$	104,500
Other (permits/misc.)	\$	6,000
Contingencies	\$	43,200
Total Project Cost	\$	475,200
Requested in this Capital Program	\$	465,200

Indirect Operating Costs:  
Overhead Costs \$ (12,296)  
Debt Service (5%-20yr.) \$ 38,131  
Sub-Total 25,836  
Total Operating Costs \$ 17,955

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	\$ 10,000	\$	\$ 10,000	\$	\$
1st Year	\$ 181,200	\$	\$ 181,200	\$	\$
2nd Year	\$ 284,000	\$	\$ 284,000	\$	\$
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: W-27  
 Preparer: ELH

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/31/12

**1. Proposal Title:** Arcadia Pumping Station Improvements

**2. 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 application will be made to permit the system as a Community Water System. Currently 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 \$ -  
 Supplies & Equipment \$ 1,000  
 Maintenance Svcs \$ 2,000  
 Other (electric) \$ 8,000  
 Sub-Total \$ 11,000

**8. Estimated Costs:**

Engineering (Staff)	\$	90,000
Land Acquisition	\$	
Construction/Equip.	\$	450,000
Professional Services	\$	136,000
Other (Misc.)	\$	10,000
Contingencies	\$	69,000
<b>Total Project Cost</b>	<b>\$</b>	<b>755,000</b>

Requested in this  
 Capital Program \$ 635,000

Indirect Operating Costs:  
 Overhead Costs \$ -  
 Debt Service (5%-20yr.) \$ 60,583  
 Sub-Total 60,583  
 Total Operating Costs \$ 71,583

**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	\$ 120,000	\$	\$ 120,000	\$	\$
1st Year	\$ 635,000	\$	\$ 635,000	\$	\$
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: JMc

DEPARTMENT: Operations  
 Sub-Organizational Unit: Water Capital

Date: 8/16/12

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	\$	370,000

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

Total Operating Costs	\$ -
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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	\$ 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: JMc

DEPARTMENT: OPERATIONS  
 Sub-Organizational Unit: Water Capital

Date: 8/16/12

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. \$ 1,729,000  
 Professional Services \$  
 Other (Labor) \$  
 Contingencies \$  
 Total Project Cost \$ 1,759,000  
  
 Requested in this  
 Capital Program \$ 1,759,000

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. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 165,000	\$	\$	\$	\$ 165,000
2nd Year	\$ 168,000	\$	\$	\$	\$ 168,000
3rd Year	\$ 171,000	\$	\$	\$	\$ 171,000
4th Year	\$ 175,000	\$	\$	\$	\$ 175,000
5th Year	\$ 180,000	\$	\$	\$	\$ 180,000
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:** 7/26/12

**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
<b>Total Project Cost</b>	<b>\$</b>	<b>726,000</b>
Requested in this Capital Program	\$	<u>726,000</u>

**6. Cost of Land Rights:**

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

**6. Cost of Land Rights:**

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

**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
<b>Sub-Total</b>	<b>\$</b>	<b>8,777</b>

**Indirect Operating Costs:**

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

<b>Total Operating Costs</b>	<b>\$</b>	<b><u>71,133</u></b>
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**10. Revenue Impact:**

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

**11. Source of Funds:**

		<b>Source</b>			
	<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	\$ 120,000	\$	\$ 120,000	\$	\$
3rd Year	\$ 450,000	\$	\$ 450,000	\$	\$

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: W-38  
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Water Capital

Date: 8/16/12

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.	\$ 200,000
Professional Services	\$ 67,000
Other (Labor)	\$ 24,000
Contingencies	\$ 44,000
Total Project Cost	\$ 370,000

Indirect Operating Costs:	
Overhead Costs	\$ (787)
Debt Service (5%-20yr.)	\$ 29,690
Sub-Total	28,903

Total Operating Costs	\$ 18,966
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Requested in this Capital Program	\$ 370,000
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**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	\$ 70,000	\$	\$ 70,000	\$	\$
2nd Year	\$ 150,000	\$	\$ 150,000	\$	\$
3rd Year	\$ 150,000	\$	\$ 150,000	\$	\$
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: 8/8/12

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)	\$	30,900
Land Acquisition	\$	
Construction/Equip.	\$	73,800
Professional Services	\$	7,300
Other (Permit)	\$	1,000
Contingencies	\$	7,000
Total Project Cost	\$	120,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 9,629
Sub-Total	\$ 9,629

Total Operating Costs	\$ 9,629
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Requested in this Capital Program	\$ 76,000
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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	\$ 44,000	\$	\$ 44,000	\$	\$
1st Year	\$ 76,000	\$	\$ 76,000	\$	\$
2nd Year	\$	\$	\$	\$	\$
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: W-45  
 Preparer: ELH

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/31/12

**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
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**10. Revenue Impact:**

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

**11. Source of Funds:**

		<b>Source</b>			
	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: EFG

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 8/8/12

- 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)	\$	15,000
Land Acquisition	\$	-
Construction/Equip.	\$	75,000
Professional Services	\$	25,000
Other (Misc)	\$	5,000
Contingencies	\$	15,000
<b>Total Project Cost</b>	<b>\$</b>	<b>135,000</b>

Requested in this Capital Program \$ 135,000

Indirect Operating Costs:  
 Overhead Costs \$ 393  
 Debt Service (5%-20yr.) \$ 10,833  
 Sub-Total 11,226  
 Total Operating Costs \$ 11,445

**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	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$ 25,000	\$	\$ 25,000	\$	\$
5th Year	\$ 110,000	\$	\$ 110,000	\$	\$
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:** 8/17/12

**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

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

Requested in this  
 Capital Program \$ 105,000

**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: 8/8/12

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) \$ 42,900  
Land Acquisition \$ -  
Construction/Equip. \$ 91,400  
Professional Services \$ 7,000  
Other (Permits) \$ 2,500  
Contingencies \$ 21,600  
Total Project Cost \$ 165,400

Indirect Operating Costs:  
Overhead Costs \$ -  
Debt Service (5%-20yr.) \$ 13,272  
Sub-Total 13,272  
Total Operating Costs \$ 15,672

Requested in this  
Capital Program \$ 148,400

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	\$ 17,000	\$	\$ 17,000	\$		\$
1st Year	\$ 148,400	\$	\$ 148,400	\$		\$
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: EFG

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Water Capital

Date: 8/8/12

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)	\$ 126,200
Land Acquisition	\$ 27,000
Construction/Equip.	\$ 601,000
Professional Services	\$ 54,000
Other (Permits)	\$ 8,300
Contingencies	\$ 102,000
Total Project Cost	\$ 918,500

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 73,703
Sub-Total	\$ 73,703

Total Operating Costs	\$ 73,703
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Requested in this Capital Program	\$ 913,500
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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	\$ 456,750	\$	\$ 456,750	\$	\$
2nd Year	\$ 456,750	\$	\$ 456,750	\$	\$
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: 7/26/12

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)	\$	36,000
Land Acquisition	\$	7,600
Construction/Equip.	\$	137,000
Professional Services	\$	12,000
Other	\$	
Contingencies	\$	21,000
Total Project Cost	\$	213,600

Indirect Operating Costs:

Overhead Costs	\$	-
Debt Service (5%-20yr.)	\$	17,140
Sub-Total	\$	17,140
Total Operating Costs	\$	17,140

Requested in this  
 Capital Program \$ 205,000

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	\$	8,600	\$	8,600	\$
1st Year	\$	205,000	\$	205,000	\$
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-51  
 Preparer: LMB

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Water Capital

Date: 7/23/12

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 plans to start a project during the summer of 2013 that would allow the construction of casing crossing with less road restoration than in normal circumstances. LCA would need to construct the main extension after the PennDot project is complete.

**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)	\$ 28,000
Land Acquisition	\$ 12,000
Construction/Equip.	\$ 95,000
Professional Services	\$ 8,000
Other	\$
Contingencies	\$ 14,000
Total Project Cost	\$ 157,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 12,598
Sub-Total	\$ 12,598
Total Operating Costs	\$ 12,598

Requested in this Capital Program	\$ 145,000
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**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	\$ 12,000	\$	\$ 12,000	\$	\$
1st Year	\$ 35,000	\$	\$ 35,000	\$	\$
2nd Year	\$ 110,000	\$	\$ 110,000	\$	\$
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-52  
 Preparer: LMB

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Water Capital

**Date:** 7/27/12

**1. Proposal Title:** Sand Spring Road Waterline Relocation

**2. Location:** NWD

**3. Description:**

Installation of a new plug valve, tapping tee & valves, a hydrant and approximately 100 feet of 8-inch waterline parallel to Sand Spring Road. Relocation is necessary due to widening of the road and intersection for the

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

Due to PennDOT's project to upgrade the intersection of Rt. 309 and Sand Spring Road, our facilities must be relocated. Our existing facilities are partially within private easement and partially within public ROW, making the cost of relocation a cost share with PennDOT. The project will be constructed by PennDOT contractors, with LCA responsible for about

**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)	\$ 7,000
Land Acquisition	\$ 5,000
Construction/Equip.	\$ 42,000
Professional Services	\$ 6,000
Other	\$
Contingencies	\$ 10,000
Total Project Cost	\$ 70,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 1,988
Sub-Total	\$ 1,988

Total Operating Costs	\$ 1,988
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Requested in this Capital Program	\$ 58,000
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**10. Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 45,220
Grants & Other	\$

**11. Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 12,000	\$	\$ 12,000	\$	\$
1st Year	\$ 58,000	\$	\$ 12,780	\$ 45,220	\$
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: 8/30/12

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)	\$ 80,000
Land Acquisition	\$
Construction/Equip.	\$ 332,000
Professional Services	\$
Other (Misc.)	\$ 3,000
Contingencies	\$ 42,000
Total Project Cost	\$ 457,000

Indirect Operating Costs:

Overhead Costs	\$ (1,573)
Debt Service (1.38%-20yr.)	\$ 26,311
Sub-Total	24,738

Total Operating Costs

\$ 23,864

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	\$ 457,000	\$	\$ 457,000	\$	\$
2nd Year	\$	\$	\$	\$	\$
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  
2013 - 2022**

**CAPITAL FINANCING JUSTIFICATION**

This Capital Plan includes 12 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 6.9% beginning in 2016. The increase equates to a \$15.37 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 \$.084 per thousand gallons beginning in 2016, which equates to a \$6.73 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 \$66 per EDU by year 2016. 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  
2013 - 2022**

**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 a 6.5 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 under design. 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  
2013-2022 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)	2013	2014	2015	2016	2017	2018 - 2022	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	9,385,000	1,830,000	650,000	800,000	800,000	800,000	800,000	3,705,000	7,555,000	High	Exp
	Subtotal Annual			10,469,500	1,830,000	760,000	909,500	910,500	911,500	912,500	4,235,500	8,639,500		
	<b>PREVIOUSLY AUTHORIZED (4)</b>													
S - 1	Western Lehigh Interceptor Rehabilitation	Various	801,000	9,736,100	785,000	183,500	974,100	7,793,500	-	-	-	8,951,100	Medium	Exp
S - 3	Central Lehigh Valley Wastewater Capacity Planning & Expansion	Various	1,274,298	80,506,000	706,500	500,000	1,050,000	4,000,000	19,000,000	30,857,500	24,392,000	79,799,500	High	PF
S - 14	Jordan Creek Wastewater System	D	554,300	7,055,000	515,000	600,000	4,000,000	1,940,000	-	-	-	6,540,000	High	PF
S - 16	Western Waisenberg Twp Wastewater Treatment Plant	D,C	3,446,600	3,446,500	1,019,000	2,427,500	-	-	-	-	-	2,427,500	High	PF
S - 15	Park Pump Station Renovations & Improvements	Various	180,340	2,257,000	220,000	1,000,000	905,000	132,000	-	-	-	2,037,000	High	Exp
S - 24	Signatory I & Investigation/Remediation Program	Various	3,218,031	10,282,000	2,845,000	1,080,000	1,500,000	1,500,000	2,000,000	645,000	712,000	7,437,000	Mandated	Exp
S - 26	LCA WTP Biogas Energy Related Improvements	Various	1,080,870	5,080,000	600,000	2,750,000	1,730,000	-	-	-	-	4,480,000	High	SS
	Subtotal Previously Authorized			118,362,600	6,690,500	8,541,000	10,159,100	15,365,500	21,000,000	31,502,500	25,104,000	111,672,100		
	<b>PENDING AUTHORIZATION</b>													
S - 4	Buckeye Road Sewer Extension	P		670,000	-	-	-	-	-	-	670,000	670,000	Low	SS
S - 6	Wynnewood Infiltration & Inflow Investigation & Remediation Program	P		651,000	-	45,000	210,000	156,000	150,000	90,000	-	651,000	Medium	Exp
S - 7	Wynnewood Terrace Sewer System Improvements	P		913,000	15,000	335,000	150,000	213,000	200,000	-	-	898,000	Mandated/High	Exp
S - 13	Sand Spring Wastewater System Improvements	P		1,187,000	-	-	-	-	-	187,000	1,000,000	1,187,000	Low	Exp
S - 17	Heidelberg Heights Infiltration & Inflow Investigation & Remediation Program	P		537,000	10,000	185,000	180,000	162,000	-	-	-	527,000	High	Exp
S - 23	Park Pump Station Force Main Upgrade	P		1,154,000	-	-	165,800	988,200	-	-	-	1,154,000	Medium	Exp
S - 25	Lynn Twp WTP Upgrades & Expansion	P		3,382,000	-	-	-	50,000	750,000	500,000	2,082,000	3,382,000	High	PF
S - 27	Spring Creek Pump Station Upgrades	P		275,000	-	200,000	75,000	-	-	-	-	275,000	Medium	Exp
	Subtotal Pending Authorization			8,769,000	25,000	765,000	780,800	1,569,200	1,100,000	777,000	3,752,000	8,744,000		
	Grand Total			\$ 137,601,100	\$ 8,545,500	\$ 10,066,000	\$ 11,849,400	\$ 17,845,200	\$ 23,011,500	\$ 33,192,000	\$ 33,091,500	\$ 129,055,600		

(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: MAB

**DEPARTMENT:** Capital Works  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 8/15/12

**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. \$400,000 is provided during 2013 and 2014 for a project to rehabilitate portions of the Breinigsville branch of the interceptor - this line is currently being assessed and we will have recommendations early in 2013. A project in 2015 is planned to install liner in approximately 18,000 LF of 36" reinforced concrete pipe where internal corrosion will threaten the structural integrity of the pipe in the future.

**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)	\$ 339,800
Land Acquisition	\$ 501,400
Construction/Equipment	\$ 6,901,500
Professional Services	\$ 1,018,400
Other (Labor)	\$
Contingencies	\$ 975,000
Total Project Cost	\$ 9,736,100
Requested in this Capital Program	\$ 8,951,100

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 699,660
Sub-Total	\$ 699,660
Total Operating Costs	\$ 699,660

**10. Revenue Impact:**

Gain/Loss in Annual Revenue	\$
Assessment, Contribution-in-Aid-of-Construction	\$ 231,810
Other	\$

**11. Source of Funds:**

	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
Prior Years	\$ 785,000	\$	\$	\$	\$ 785,000
1st Year	\$ 183,500	\$	\$ 130,095	\$ 53,405	\$ -
2nd Year	\$ 974,100	\$	\$ 795,695	\$ 178,405	\$ -
3rd Year	\$ 7,793,500	\$	\$ 7,793,500	\$	\$ -
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 - 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.) \$ 5,537,690  
 Sub-Total \$ 5,537,690  
  
 Total Operating Costs \$ 5,537,690

10. **Revenue Impact:**  
 Gain/Loss in Annual Revenue \$ \_\_\_\_\_  
 Assessment, Contribution-  
 in-Aid-of-Construction \$ 7,287,685  
 Other \$ \_\_\_\_\_

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves *
Prior Years	\$ 706,500	\$	\$	\$	\$ 3,500,000
1st Year	\$ 500,000	\$	\$ -	\$ 673,800	\$ 3,673,800
2nd Year	\$ 1,050,000	\$	\$	\$ 673,800	\$ 3,297,600
3rd Year	\$ 4,000,000	\$	\$ 28,600	\$ 673,800	\$ (3,297,600)
4th Year	\$ 19,000,000	\$	\$ 18,247,970	\$ 752,030	\$
5th Year	\$ 30,857,500	\$	\$ 30,197,995	\$ 659,505	\$
6th thru 10th Years	\$ 24,392,000	\$	\$ 20,537,250	\$ 3,854,750	\$

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

\* Wastewater capacity reserves are expected to be \$3,500,000 at year-end 2012.  
 (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 l.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
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10. **Revenue Impact:**

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

Requested in this Capital Program	\$ 670,000
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11. **Source of Funds:**

		Source			
	Need	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: JMc

**DEPARTMENT:** OPERATIONS  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 8/16/12

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

**3. Description:**

2013		2016	1 Full Size Pick-up Truck
2014	1 Full Size Pick-up Truck	2017	1 Full Size Pick-up Truck
2015	1 Full Size Pick-up Truck	2018-2022	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	\$ -

Requested in this  
 Capital Program \$ 254,500

**10. Revenue Impact:**

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

**11. Source of Funds:**

	Need	Source			
		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:** 7/19/12

**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 ~\$ 163,000 will be amortized over 20 years and paid through the user rates. 80% of the remediation measures ~\$380,000 will be capitalized over 20-years, where the remaining 20% of the remediation measures ~\$95,000 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) \$ 78,000  
 Land Acquisition \$  
 Construction/Equipment \$ 326,000  
 Professional Services \$ 165,000  
 Other (Labor) \$  
 Contingencies \$ 82,000  
 Total Project Cost \$ 651,000  
 Requested in this  
 Capital Program \$ 651,000

Indirect Operating Costs:  
 Overhead Costs \$ (2,360)  
 Debt Service (5%-10yr.) \$ 49,990  
 Sub-Total \$ 47,630  
 Total Operating Costs \$ 46,219

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

**11. Source of Funds:**

	Need	Source			
		Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 45,000	\$	\$ 45,000	\$	\$
2nd Year	\$ 210,000	\$	\$ 210,000	\$	\$
3rd Year	\$ 156,000	\$	\$ 36,000	\$	\$
4th Year	\$ 150,000	\$	\$ 30,000	\$	\$
5th Year	\$ 90,000	\$	\$ 65,000	\$	\$
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: 8/20/12

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 2013. During design of that work, an evaluation of the existing, unused water tanks for possible flow equalization and/or sludge holding will be completed. If favorable, design, permitting and construction will be executed in 2013-2014. Additional system improvements,

**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. The utilization of the existing abandoned water tanks for wastewater flow equalization and/or sludge holding will improve the operation of the WWTP. Future improvements at the treatment plant, remaining pumping stations and/or forcemains will increase reliability.

**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)	\$	65,300
Land Acquisition	\$	-
Construction/Equipment	\$	626,700
Professional Services	\$	111,000
Other (Labor)	\$	-
Contingencies	\$	110,000
Total Project Cost	\$	913,000
Requested in this Capital Program	\$	898,000

**Indirect Operating Costs:**

Overhead Costs	\$	-
Debt Service (5%-20yr.)	\$	116,940
Sub-Total	\$	116,940
Total Operating Costs	\$	116,940

**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	\$ 15,000	\$	\$ 5,000	\$	\$	10,000
1st Year	\$ 335,000	\$	\$ 335,000	\$	\$	
2nd Year	\$ 150,000	\$	\$ 150,000	\$	\$	
3rd Year	\$ 213,000	\$	\$ 213,000	\$	\$	
4th Year	\$ 200,000	\$	\$ 200,000	\$	\$	
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: DDY

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Wastewater Capital

Date: 8/16/12

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 \_\_\_\_\_

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: S-10  
 Preparer: JMc

DEPARTMENT: Operations  
 Sub-Organizational Unit: Wastewater Capital

Date: 8/16/12

1. **Proposal Title:** Other Equipment      2. **Location:** WLI and LLRI , Ph 1

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 equipment is required from time to time to maintain service integrity. Items include valves, sampling equipment, electric and electronic equipment, I/I 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: \$ \_\_\_\_\_

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)	\$	
Land Acquisition	\$	
Construction/Equipment	\$	230,000
Professional Services	\$	
Other (Labor)	\$	
Contingencies	\$	
Total Project Cost	\$	230,000
Requested in this Capital Program	\$	230,000

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			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 50,000	\$ 50,000	\$	\$	\$
2nd Year	\$ 20,000	\$ 20,000	\$	\$	\$
3rd Year	\$ 20,000	\$ 20,000	\$	\$	\$
4th Year	\$ 20,000	\$ 20,000	\$	\$	\$
5th Year	\$ 20,000	\$ 20,000	\$	\$	\$
6th thru 10th Years	\$ 100,000	\$ 100,000	\$	\$	\$

12. **Departmental Priority Rating:**

High X      Medium \_\_\_\_\_      Low \_\_\_\_\_      Legally Mandated \_\_\_\_\_

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: S - 13  
 Preparer: LMB

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 9/6/12

**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)	\$ 98,000
Land Acquisition	\$ 35,000
Construction/Equipment	\$ 742,000
Professional Services	\$ 132,000
Other (Labor)	\$
Contingencies	\$ 180,000
Total Project Cost	\$ 1,187,000

**Indirect Operating Costs:**

Overhead Costs	\$ (13,766)
Debt Service (5%-20yr.)	\$ 38,680
Sub-Total	\$ 24,915

Total Operating Costs	\$ (2,733)
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Requested in this Capital Program	\$ 1,187,000
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**10. Revenue Impact:**

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

**11. Source of Funds:**

		<b>Source</b>			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$	\$	\$	\$	\$
2nd Year	\$	\$	\$	\$	\$
3rd Year	\$	\$	\$	\$	\$
4th Year	\$	\$	\$	\$	\$
5th Year	\$ 187,000	\$	\$ 187,000	\$	\$
6th thru 10th Years	\$ 1,000,000	\$	\$ 295,000	\$ 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:** 8/15/12

**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>6,540,000</u>
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Total Operating Costs	\$ <u>534,921</u>
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**10. Revenue Impact:**

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

**11. Source of Funds:**

		<b>Source</b>			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
Prior Years	\$ 515,000	\$	\$ 515,000	\$	\$
1st Year	\$ 600,000	\$	\$ 600,000	\$	\$
2nd Year	\$ 4,000,000	\$	\$ 4,000,000	\$	\$
3rd Year	\$ 1,940,000	\$	\$ 600,280	\$ 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:** 8/20/12

**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	\$ 2,037,000
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Indirect Operating Costs:	
Overhead Costs	\$ (3,933)
Debt Service (5%-20yr.)	\$ 163,450
Sub-Total	\$ 159,517
Total Operating Costs	\$ 144,332

**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	\$ 220,000	\$	\$	\$	\$ 220,000
1st Year	\$ 1,000,000	\$	\$ 1,000,000	\$	\$
2nd Year	\$ 905,000	\$	\$ 905,000	\$	\$
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 - 16  
 Preparer: MAB

**DEPARTMENT:** Capital Works  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 8/14/12

**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

Requested in this  
 Capital Program \$ 2,427,500

**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			
	Need	Oper.	Assess.,		Reserves
		Revenues	Borrowing	Contr.-in-Aid (A)	
Prior Years	\$ 1,019,000	\$	\$ 824,000	\$ 195,000	\$
1st Year	\$ 2,427,500	\$	\$ 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 - 17  
 Preparer: LMB

DEPARTMENT: Capital  
 Sub-Organizational Unit: Wastewater Capital

Date: 7/27/12

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 ~ \$112,000 will be amortized over 20 years and paid through the user rates. 80% of the remediation measures ~\$330,000 will be capitalized over 20-years, where remaining 20% of the remediation measures ~\$82,000 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:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid	Reserves
Prior Years	\$ 10,000	\$	\$	\$	\$ 10,000
1st Year	\$ 185,000	\$	\$ 185,000	\$	\$
2nd Year	\$ 180,000	\$	\$ 180,000	\$	\$
3rd Year	\$ 162,000	\$	\$ 162,000	\$	\$
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-22  
 Preparer: PLM

DEPARTMENT: Operations  
 Sub-Organizational Unit: Wastewater Capital

Date: 8/7/12

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	\$	7,555,000

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	\$	1,830,000	\$	\$	\$ 1,830,000
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	\$	3,705,000	\$	\$	\$ 3,705,000

12. **Departmental Priority Rating:**

High X Medium \_\_\_\_\_ Low \_\_\_\_\_ Legally Mandated \_\_\_\_\_

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: S-23  
 Preparer: MAB

**DEPARTMENT:** Capital Works  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 8/14/12

**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)	\$	98,800
Land Acquisition	\$	
Construction/Equipment	\$	708,400
Professional Services	\$	169,700
Other (Labor)	\$	
Contingencies	\$	177,100
Total Project Cost	\$	1,154,000

Indirect Operating Costs:

Overhead Costs	\$	77
Debt Service (5%-20yr.)	\$	92,600
Sub-Total	\$	92,677

Total Operating Costs	\$	92,727
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Requested in this Capital Program	\$	1,154,000
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**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	\$ 165,800	\$	\$ 165,800	\$	\$
2nd Year	\$ 988,200	\$	\$ 988,200	\$	\$
3rd Year	\$	\$	\$	\$	\$
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: 08/13/12

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.)	\$ 66,010
Sub-Total	\$ 66,010

Total Operating Costs	\$ 66,010
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10. **Revenue Impact:**

Gain/Loss in Annual Revenue	\$	
Assessment, Contribution-		
in-Aid-of-Construction	\$	1,219,940
Other	\$	

11. **Source of Funds:**

		Source				
	Need	Oper.			Assess.,	Reserves (A)
		Revenues *	Borrowing	Contr.-in-Aid (A)		
Prior Years	\$ 2,845,000	\$ 274,205	\$	\$	\$	\$ 2,570,795
1st Year	\$ 1,080,000	\$ 96,610	\$ -	\$ 108,290	\$	\$ 875,100
2nd Year	\$ 1,500,000	\$ 106,730	\$ -	\$ 108,290	\$	\$ 1,284,980
3rd Year	\$ 1,500,000	\$ 118,730	\$ -	\$ 108,290	\$	\$ 1,272,980
4th Year	\$ 2,000,000	\$ 130,730	\$ 425,305	\$ 123,965	\$	\$ 1,320,000
5th Year	\$ 645,000	\$ 135,830	\$ 397,350	\$ 111,820	\$	\$ -
6th thru 10th Years	\$ 712,000	\$ 140,100	\$	\$ 659,285	\$	\$ (87,385)
Beyond 10 Years	\$	\$	\$	\$	\$	\$

12. **Departmental Priority Rating:**

High ☒ Medium ☐ Low ☐ Legally Mandated ☐

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: S-25  
 Preparer: FJL

**DEPARTMENT:** CAPITAL WORKS  
**Sub-Organizational Unit:** Wastewater Capital

**Date:** 9/6/12

- 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 2013. 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)	\$	239,000
Land Acquisition	\$	
Construction/Equip.	\$	2,482,000
Professional Services	\$	239,000
Other	\$	
Contingencies	\$	422,000
Total Project Cost	\$	3,382,000
Requested in this Capital Program	\$	3,332,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-30yr.)	\$ 220,004
Sub-Total	220,004
Total Operating Costs	\$ 300,004

**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	\$ 50,000	\$	\$ 50,000	\$	\$
1st Year	\$ 750,000	\$	\$ 750,000	\$	\$
2nd Year	\$ 500,000	\$	\$ 500,000	\$	\$
3rd Year	\$ 2,082,000	\$	\$ 2,082,000	\$	\$
4th Year	\$	\$	\$	\$	\$
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.

**Lehigh County Authority**  
**CAPITAL PROGRAMMING PROJECT DETAIL**

Project: S-26  
 Preparer: FJL

DEPARTMENT: CAPITAL WORKS  
 Sub-Organizational Unit: Wastewater Capital

Date: 9/6/12

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 and replacement of the Digester Mixers, that will be completed in 2013 and will increase biogas production and achieve operational savings. Phase 2 is the construction of a on-site co-generation and heat recovery (CHP) system w/ bio-gas storage to be completed 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)	\$	200,000
Land Acquisition	\$	
Construction/Equip.	\$	3,590,000
Professional Services	\$	525,000
Other	\$	15,000
Contingencies	\$	750,000
Total Project Cost	\$	5,080,000

Indirect Operating Costs:	
Overhead Costs	\$ -
Debt Service (5%-20yr.)	\$ 407,632
Sub-Total	407,632
Total Operating Costs	\$ (471,368)

Requested in this  
 Capital Program \$ 4,480,000

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	\$ 600,000	\$	\$ 600,000	\$	\$
1st Year	\$ 2,750,000	\$	\$ 2,750,000	\$	\$
2nd Year	\$ 1,730,000	\$	\$ 1,730,000	\$	\$
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: S-27  
Preparer: LMB

DEPARTMENT: CAPITAL WORKS  
Sub-Organizational Unit: Wastewater Capital

Date: 7/19/12

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) \$ 35,000  
Land Acquisition \$ \_\_\_\_\_  
Construction/Equip. \$ 175,000  
Professional Services \$ 35,000  
Other \$ \_\_\_\_\_  
Contingencies \$ 30,000  
Total Project Cost \$ 275,000

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 \$ 275,000  
Grants & Other \$ \_\_\_\_\_

Requested in this  
Capital Program \$ 275,000

11. **Source of Funds:**

		Source			
	Need	Oper. Revenues	Borrowing	Assess., Contr.-in-Aid (A)	Reserves
Prior Years	\$	\$	\$	\$	\$
1st Year	\$ 200,000	\$	\$	\$ 200,000	\$
2nd Year	\$ 75,000	\$	\$	\$ 75,000	\$
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.

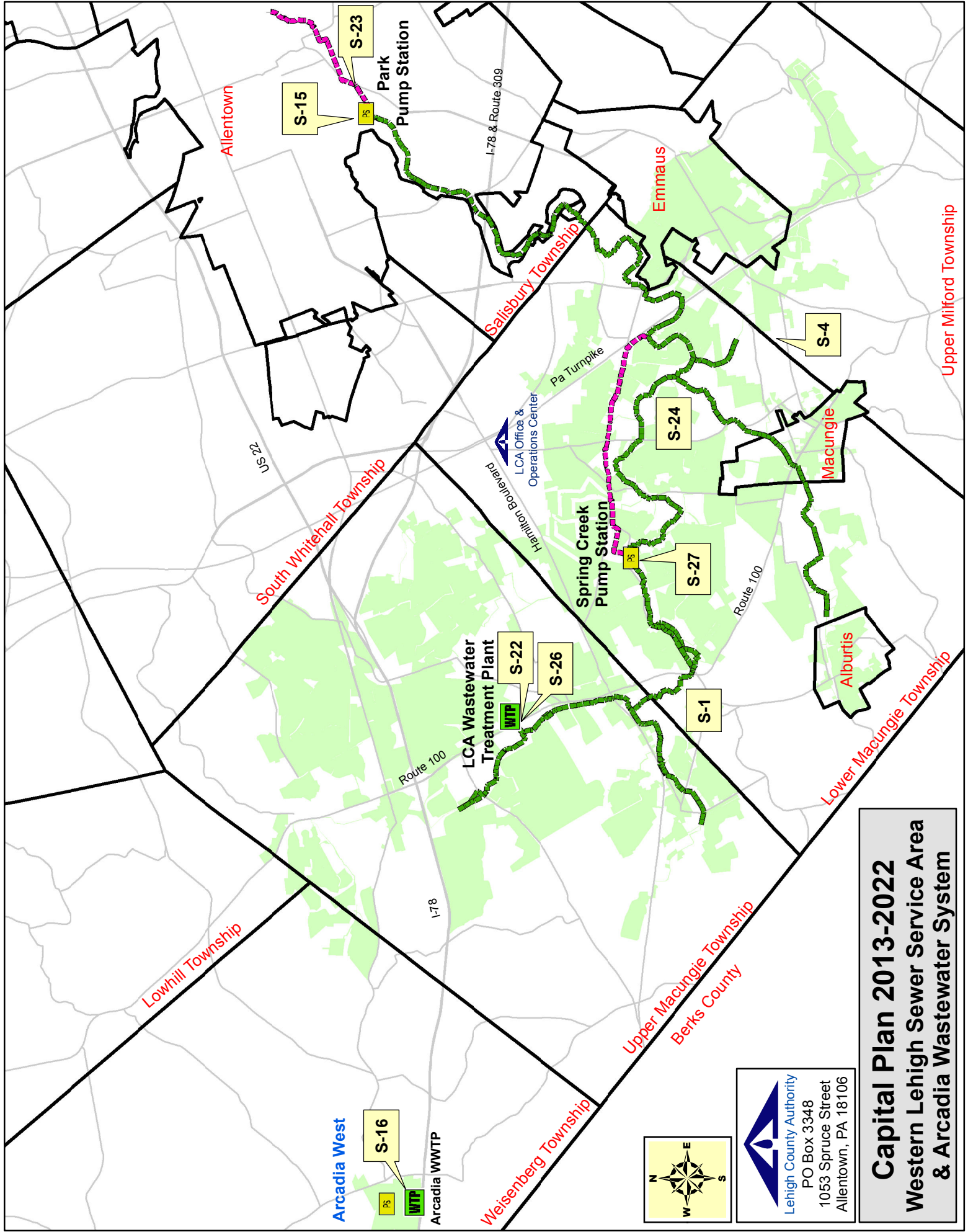
## **APPENDIX**











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

# Capital Plan 2013-2022

## Western Lehigh Sewer Service Area & Arcadia Wastewater System



# Capital Plan 2013-2022

## Northern Lehigh & Washington Water & Sewer Service Areas



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



Northampton County

