



# LEHIGH COUNTY AUTHORITY

August 31, 2015

## BOARD MEETING AGENDA

1. Call to Order
2. Review of Agenda
  - *Public Participation Sign-In Request*
3. Executive Sessions
4. Approval of Minutes
  - *July 27, 2015 Workshop Meeting Minutes*
5. Public Comments
6. Action / Discussion Items

### **FINANCE AND ADMINISTRATION**

- *2015 Audit*
- *Water System Financing*
- *2013/2014/2015 Benchmarks*
- *2<sup>nd</sup> Quarter 2015 Financial Statement*
- *2016 Budget Assumptions*

### **WATER**

- *Suburban Division – Pumping Station Projects (SCADA)*

### **WASTEWATER**

- *Roof Replacement Project – Pretreatment Plant*
- *Biosolids Land Application Contract*

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

### **SEPTEMBER MEETINGS**

Workshop Meeting  
Board Meeting

September 14 – 12:00 p.m.  
September 28 – 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**  
**July 27, 2015**

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The Regular Meeting of the Lehigh County Authority was called to order at 12:20 p.m., on Monday, July 27, 2015, Chairman Brian Nagle presiding. Other Members present at the commencement of the meeting were: Linda Rosenfeld, Emrich Stellar, Tom Muller, Richard Bohner, Norma Cusick, Ted Lyons and Deana Zosky. Authority Staff present were Aurel Arndt, Liesel Adam, Pat Mandes, Frank Leist, Robert Kerchusky, John Parsons, Chuck Volk, Nathan Roush and Lisa Miller.

**REVIEW OF AGENDA**

Aurel Arndt stated that he has two items for an Executive Session. One regarding property acquisition and one regarding personnel. He also has an additional information item regarding the Financial Report.

Chairman Nagle said that the Board will discuss some committees and there will be a polling of the Board regarding skill sets and interests.

**APPROVAL OF MINUTES**

**May 18, 2015 Special Meeting Minutes**

On a motion by Richard Bohner, seconded by Linda Rosenfeld, the Board unanimously approved the Minutes of the May 18, 2015 Special Meeting (8-0).

**May 26, 2015 Regular Meeting Minutes**

Richard Bohner stated that the date is incorrect and needs to be corrected to read Tuesday May 26, 2015 not Monday, May 26, 2015.

On a motion by Richard Bohner, seconded by Norma Cusick, the Board unanimously approved the Minutes of May 26, 2015 as corrected (8-0).

**June 15, 2015 Workshop Meeting Minutes**

On a motion by Norma Cusick, seconded by Linda Rosenfeld, the Board unanimously approved the Minutes of June 15, 2015 (6-0). Richard Bohner and Deana Zosky abstained.

**July 13, 2015 Workshop Meeting Minutes**

On a motion by Richard Bohner, seconded by Norma Cusick, the Board unanimously approved the Minutes of July 13, 2015 (6-0). Ted Lyons and Deana Zosky abstained.

**PUBLIC COMMENTS**

None.

**ACTION AND DISCUSSION ITEMS**

**Electronic Bill Presentment & Payment Processing Contract**

Liesel Adam said that she is proposing to enter into an agreement with Paymentus Corporation which provides online and paperless billing services. This service would be an enhancement for our customers and would benefit LCA by reducing manual data entry for electronic payments, reduce/eliminate incorrect bank deposits, and standardize LCA's customer experience. Printing and payment processing costs are estimated to decrease slightly as a result of implementing the Paymentus system, and future costs will change as customer adoption of electronic billing and payment processing increases. Increases in future costs are expected to be largely offset by significant benefits in customer satisfaction and operational efficiencies. LCA does not charge a processing fee for payments. Paymentus is bonded, SAS70 and PCI compliant. Liesel said that the safeguards for Paymentus are the same as what is currently in place at LCA and any security

violations would be the responsibility of Paymentus. Legal has reviewed the agreement and all references have been checked.

On a motion made by Emrich Stellar, seconded by Norma Cusick, the Board unanimously approved the Master Services Agreement for Paymentus Corporation, which includes the Agreement and pricing for InfoSend Corporation and Bank Up Corporation and is contingent upon final review by legal (8-0).

### **Delaware Valley Trust**

Aurel Arndt stated that LCA received an Innovation award for its network fleet monitoring system for 2014.

### **Suburban Division – WLI/LLRI Meter Station No. 5 Rehabilitation**

Frank Leist gave an overview of the project that proposes to repair one meter pit structure to eliminate seepage and infiltration, replace flow meters, install valves to isolate flowmeters for future maintenance and install a valve cleanout at each inverted siphon to facilitate future maintenance and line cleaning. He is asking for approval of the Capital Project Authorization in the amount of \$158,300 and award the contract to C&T Associates, Inc. in the amount of \$143,300 which is included in the Capital Project Authorization.

On a motion by Tom Muller, seconded by Norma Cusick, the Board unanimously approved the Capital Project Authorization in the amount of \$158,300 which includes the General Construction Contract award to C&T Associates, Inc. in the amount of \$143,300 (8-0).

### **SYSTEM OPERATIONS OVERVIEW**

Robert Kerchusky reported that the output at the Water Filtration Plant in Allentown averages approximately 20 million gallons per day. There have been some problems with power outages the last couple of weeks from storms causing interruptions. Kline's Island is receiving an average of 30 million gallons per day. The plant is in the middle of the motor control center project. There were also new duct banks put in leaving the driveways torn up but they are now in the process of being paved. Last week, there were a few projects to repair valves that were broken prior to the Concession. This was a large project that required portions of the system to be shut down for approximately 30 minutes. Also, the contract with All Services Contracting to clean one of the filters at the water filtration plant will be scheduled in a month or two.

### **STAFF COMMENTS**

Aurel Arndt provided the Board with the quarterly Budget comparative which shows Budget activity for both the Suburban division and the City division. At the end of 2015, the City reports will be conformed into the same format as the Suburban division. While there are no concerns in the Suburban division budget, it was noted that the revenues are down in the City's Wastewater division. Aurel stated that it may be due to lower flows from the signatories or the dry first quarter period. He also noted that the expenses are also higher on the wastewater side. Aurel said that any questions can be directed to him. It was noted that the Staff reviews the financials on a monthly basis.

Aurel Arndt commented that the Board has received a copy of the 2014 Comprehensive Annual Financial Report. He credited Linda Eberhart for her work and dedication in putting it together after Ed Bielarski's departure.

### **SOLICITOR'S COMMENTS**

None.

### **OTHER COMMENTS**

None.

### **EXECUTIVE SESSION**

The Chairman called an Executive Session at 1:00 p.m. to discuss property acquisition and a personnel matter.

On a motion made by Emrich Stellar, seconded by Linda Rosenfeld, the Board unanimously authorized the Staff acquisition of additional property in accordance with the parameters outlined to the Board in Executive Session (8-0).

On a motion made by Tom Muller, seconded by Emrich Stellar, the Board unanimously moved to hire Liesel Adam as the next Chief Executive Officer, under the terms offered by the Board, effective January 1, 2016 (8-0).

Liesel Adam was invited back into the meeting after the Board vote and was advised and congratulated on the Board's decision. Liesel then presented plans related to the communication of the Board's decision and her transitional plans.

The session ended at 1:38 p.m.

**ADJOURNMENT**

There being no further business, the Chairman adjourned the meeting at 1:38 p.m.

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Richard H. Bohner  
Secretary

**FINANCE & ADMINISTRATION**

**ACTION ITEMS**

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**1. 2015 Audit**

We recommend approval of a one year extension of the current audit contract with Zelenofske and Axelrod. The proposed \$42,500 fee is the same as the 2014 Audit fee.

**2. Water System Refinancing**

Bids to refinance the Water Revenue Bond, 2008 Series (Bond), will be received on August 27th. The outstanding amount of the Bond is currently \$9,465,000 and will mature on November 1, 2026. Assuming favorable bids are received, we plan to recommend approval of the refinancing and acceptance of the winning bid. See attached Term Sheet and Draft Resolution 8-2015-1. Additional documents will likely be forwarded prior to the Board Meeting (**green**).

**3. 2013/2014/2015 YTD Benchmarks**

Since the start of the Allentown Lease, routine reporting of Authority performance on # Benchmarks ceased. Recently, these Benchmarks were updated and measurements for City Division activity were added where available. In 2016, comprehensive review of the Benchmarks will be conducted and a determination reached on the most meaningful Benchmarks to track in the future. See attached (**ivory**).

**4. 2<sup>nd</sup> Quarter 2015 Financial Statement**

The 2<sup>nd</sup> Quarter 2015 Financial Statement is presented for review and acceptance. A brief overview and copies of the Financial Statement will be presented at the meeting.

**5. 2016 Budget Assumptions**

The 2016 Budget Assumptions will be sent out under separate cover.

**DISCUSSION ITEMS**

**INFORMATION ITEMS**

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

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
Cons Wtr (2)	Santander Bank	Wilmington, DE	249,000.00	7/29/15	7/29/16	0.65

Fund Descriptions for Investments:

Cons Wtr (2)	Consolidated Water (2)
LLRI CR	Little Lehigh Relief Interceptor Capital Reserves
Cons LL2 (314)	Consolidated Little Lehigh Relief Interceptor 2
WW Capac	Wastewater Capacity
2010 Wtr Cons A	2010 Water Construction, Series A Bond
Wtr R&R	Renewal and Replacement

## WATER

### **ACTION ITEMS**

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1. **Suburban Division – Pumping Station Projects (SCADA)**

This project involves upgrades at two existing small system booster stations and the installation of one new major booster station in the Central Lehigh Division (CLD) – see the Information Item below for more information. The process mechanical design for all three of these projects commenced in June. The attached documents request Board approval to add SCADA for all three projects (*blue*).

### **DISCUSSION ITEMS**

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### **INFORMATION ITEMS**

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1. **Suburban Division - Water Main Replacement Program Cycle 1**

The project consists of the replacement of 1-mile of aged and/or failing Cast Iron water main. Design is currently under way.

2. **Suburban Division – Pumping Station Projects**

This project will involve upgrades at two existing small system booster stations and the installation of one new major booster station in the Central Lehigh Division (CLD). The Pine Lakes Project will feature the conversion of the existing hydro-pneumatic station to a variable frequency drive controlled double pumping system (along with other miscellaneous improvements). The Crestwood Project consists of abandonment of existing wells and storage tank currently serving higher elevation customers and a connection of the pumping station to the existing North Whitehall Division System. The CLD Auxiliary Pump Station Project will feature the installation of a new booster station and main extension to pump water from the Lower to the Upper System. The design for all three of these projects commenced in June.

3. **Allentown Division- Schantz Spring Chlorination Issue**

The project is to design and construct a facility or improvements that assure continuous chlorination of the Schantz Spring water supply. PADEP permit applications been prepared and all materials have been ordered so installations may begin. Chlorine injection point has been moved back to the bypass line, and the new chlorine analyzer is on-line. Correlation of chlorine levels between the spring and the water plant have begun in order to determine if a static mixer is required. Peristaltic chemical pumps have been installed. A test run for the stand-by power will be scheduled and completed prior to the official completion of the project. This Project is identified as Un-Completed Work and will be funded by the City.

4. **Allentown Division – Prelease Valve Replacements**

The project is the replacement of approximately 55 inoperable valves in multiple locations throughout the City that existed prior to the lease settlement. Design is currently under way. This project is identified as Un-Completed Work and will be funded by the City.

5. **Allentown Division – Water Main Replacement Program- Cycle 2**

The project is the replacement of 2-miles of aged and/or failing Cast Iron water main in multiple locations throughout the City. Construction is currently under way. This Project is identified as Schedule-7 Work and will be funded by LCA.

**6. Allentown Division – Transmission Main – Leak Detection Survey**

The Project includes the use of a non-invasive leak detection methodology to find any leaks that may exist in approximately 33,000 linear-feet of large transmission mains ranging from 16 thru 36 inches in diameter. Both steel and cast iron pipes will be evaluated, with a majority of these mains over 65 years old. Effective non-invasive leak detection on mains of these sizes is a specialized service which requires sophisticated equipment and a high level of expertise. To facilitate the transmission main leak detection survey for this year and to be utilized for future surveys, this project includes the installation by hydro-excavation (*to minimize road damage and restoration costs*) of 21 permanent roadway monitoring points. The Lease Operating Standards requires 110 miles of water mains be surveyed annually. Excepting for the large transmission mains, this work is executed by the Allentown Division Distribution & Collection Department. The leak detection survey footage from this project will count towards the 110 mile annual requirement. The project will be funded by the LCA Allentown Division.

**7. Allentown Division- Miscellaneous Water Filtration Plant / Water Distribution**

Two projects have begun and are in various stages of proposals and/or finalization of work scope. The projects include: Painting of water plant piping to comply with PaDEP inspection report and a Stormwater pump/control upgrades at Water Distribution. The painting project will be an operational expense, while the Stormwater pump will be a capital project. The painting specifications are being developed with the actual work planned for later this fall or over the winter. These projects will be funded by the LCA Allentown Division.

**8. Developments**

Water system construction is occurring in the following developments:

- Hamilton Crossings, 2 commercial lots with 20 buildings having retail, financial, convenience and restaurant uses, LMT
- Highgate, Phase 3 (Dunbar Tract), 63 residential lots (sfa), UMT (currently constructing sub-phase TH-4)
- Liberty at Mill Creek, 2 industrial lots, UMT
- Spring Creek Settlement Properties, 14 commercial/industrial lots, LMT
- Valley West Estates, Phases 4, 5 & 6, 46 residential lots (sfd), UMT (currently on hold)
- Woodmont at Upper Macungie, 13 apartment buildings (312 units) and one community center, UMT

Water system plans are being reviewed for the following developments:

- Above & Beyond (personal care facility), 2 commercial lots, UMT
- Bortz Tract, 14 commercial units, UMT/SWT
- Diocesan Pastoral Center, 2 commercial lots, 3 additional lots and residual lot for existing cemetery, LMT
- Fields at Indian Creek, 218 residential lots (sfd) & community center, LMT/UMilT/Emmaus, water and sewer
- Grandview, 6 commercial units and 204 apartment units, LMT
- Grant Street Townes, 18 residential lots (sfa), WashT
- Hickory Park Estates, 3 residential lots (sfd), 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  
Morgan Hills, 40 residential lots (sfd), WeisT, water and sewer  
North Whitehall Commercial Center (Walmart), 5 commercial lots, NWT, water and  
sewer  
Shepherd's Corner, 1 commercial lot, LMT  
Trexler Business Center, Lot 1, 1 commercial building, LMT  
Weilers Road Twins, 82 residential lots (sfa), UMT  
Woodmere Estates, 60 residential units (sfd), UMT

## WASTEWATER

### ACTION ITEMS

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1. **Roof Replacement Project, Pretreatment Plant**

As part of a multi-year program to address aging building roofs at the Pre-treatment Plant, which were previously identified in a study performed by D'Huy Engineering as displaying an urgent need of repair/replacement, LCA directed D'Huy Engineering to provide design and bid phase services for a 2015 roof replacement project. The scope of the project includes the Administration Building roof and Digester Building roof. The project is to be funded under the 2015 Capital projects budget for the Pre-treatment plant. Bids for construction were opened on 8/20/15 and reviewed by LCA and D'Huy Engineering. Award of the construction contract is requested at the August board meeting (**grey**).

2. **Biosolids Land Application Contract**

Treatment Plants rely heavily on settling processes in order to provide the appropriate level of treat so that the water can be safely recycled into rivers or streams. The solids removed by the settling of wastewater are typically highly putrescible and must be stabilized before they can safely recycled as biosolids on farm fields or disposed in a sanitary landfill. At Kline's Island the solids captured by 17 settling tanks constructed at the treatment facility are stabilized in three anaerobic digesters. Anaerobic digestion of the Lehigh Valley's wastewater solids yields approximately 14,500 wet tons of biosolids per year. Bids for the beneficial reuse of biosolids produced at Kline's Island WWTP were due on 8/04/15 and only one bid was received. Award of the biosolids land application contract is requested at the August board meeting (**yellow**).

### DISCUSSION ITEMS

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### INFORMATION ITEMS

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1. **Suburban Division - Wastewater Treatment Capacity**

The 537 consultant is performing a study to determine if the levels of TDS can be reduced at the PTP by source control. If the TDS cannot be reduce it is less likely that a PTP option will be possible for a direct discharge.

2. **Suburban Division – SCARP**

The alternatives analysis (modeling) is currently underway by the program consultant. This will establish which set of solutions will be the most cost effective. The City Engineer and the LCA Engineering team have been working together to coordinate the modeling efforts being performed. The semi-annual EPA Report was submitted in July. There has been no response from EPA on our request for an extension.

3. **Suburban Division -Wynnewood Terrace Pump Station and Force Main Replacement**

Work started on April 13, 2015, and is expected to be complete by mid-September. The Pump Station contractor has excavated and installed the pump station structure. Work at the site continues to progress.

4. **Suburban Division -Lynn Township – WWTP Improvements, Phases 1 & 2**

The project will upgrade the WWTP head works. Gannett Fleming submitted the 90% Final Design for review and comment.

5. **Suburban Division -Condition Assessments for Package Wastewater Treatment Plants**

LCA staff met with Cardno BCM staff in early June. Initial site visits were made and data developed. Work should be completed by the end of August 2015.

6. **Allentown Division – Sanitary Sewer Manhole Lining, Cycle 2**

This annual project will install a lining system (to eliminate infiltration) in approximately 85 aged brick manholes identified by LCA staff. The design phase has been administratively approved. Board approval of the construction phase was granted at the July Workshop Meeting – construction began in early August. The project is identified as Administrative Order Work and will be funded by the City.

7. **Allentown Division – Manhole Collars with Water Tight Frame and Covers, Cycle 2**

This three year project will permanently secure the frame and cover of approximately 87 aged brick manholes identified by current LCA staff. This work will eliminate inflow from entering these manholes and eliminate the potential for sanitary sewer overflows (SSO's) from these manholes. The design phase has been administratively approved. Board approval of the construction phase was granted at the July Workshop Meeting – construction began in late July. The project is identified as Administrative Order will be funded by the City.

8. **Allentown Division - WWTP-Replacement of Motor Control Centers**

This Project will replace five aged motor control centers that provide power on a 24/7 basis to various parts of the WWTP. The project has been approved by the City as a Major Capital Improvement (MCI). The Construction Phase of the project has been approved by the Board. Notice to Proceed has been sent to both contractors and a pre-construction meeting was held on 2/13/15. Various submittals are currently in the approval process. Power Zone House delivery has been delayed to October 19. This Project is identified in the Lease as Schedule 7 (required) project and will be funded the LCA Allentown Division.

9. **Allentown Division – Roof Rehabilitation and Replacements**

The Project consists of replacing 26 facility roofs that were identified as in need of immediate replacement in the Roof Evaluation report performed by D'Huy Engineering. The design of these replacements are proceeding. The project was presented to the City for review/approval as a Major Capital Improvement (MCI), but the city rejected it as such. Bid specifications are being finalized for all 26 roofs. A PLA study was completed and it was determined that a PLA was inappropriate for this project. The construction contract with ProCom is being finalized. Board approved the construction contract at their July 13, 2015 Workshop Meeting. The project will be funded by the LCA Allentown Division.

10. **Allentown Division- SCADA System Installation –Wastewater Treatment Plant:**

All documents have been signed and the Kickoff Meeting was on Tuesday, March 17. This project is identified Un-Completed Work and will be funded by the City. Radio equipment and server rack were delivered the week of Aug. 10, 2015.

11. **Allentown Division–Wastewater Treatment Plant- Digester Cover Replacements:**

This project involves the cover replacement of both the Primary Digester No. 1 and the Secondary Digester (the cover for Primary Digester No. 2 was previously replaced in 2010). The Design Phase has been approved and a kick-off meeting was held in

February 2015. A Major Capital Improvement (MCI) Conceptual Design has been submitted to the City for review and approval. A request for Board approval of the construction phase is anticipated in November 2015. This Project is identified in the Lease as Schedule 7 (required) project and will be funded the LCA Allentown Division.

12. **Allentown Division- Miscellaneous Projects at the Wastewater Treatment Plant:**

Several projects have begun and are currently in the design phase. The projects include: Emergency power at the chlorination building, Odor Control Tower Replacements, and Locker Room upgrades. Construction bids for the Odor Control Towers are due on August 27, 2015. Bid specifications for the Chlorine Building backup power and the Locker Room Upgrades are currently being completed. These projects will be funded by the LCA Allentown Division.



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**TO:** Distribution List

**FROM:** Christopher Gibbons

**RE:** Lehigh County Authority - Water Revenue Bond, 2015 A Series

**DATE:** August 12, 2015

The Lehigh County Authority, Lehigh County, Pennsylvania (the "Authority") is seeking proposals from qualified lending institutions of approximately \$9,830,000 in order to refinance its existing Water Revenue Bond, Series of 2008.

The Authority will be requesting proposals from a number of regional banking institutions for the loan. In order to ensure the proposals satisfy all pertinent Federal, State and local laws, and so the proposals can be evaluated primarily on their respective economic merits, we have enclosed the following materials:

- A.) Term Sheet:** The term sheet shall provide you with a summary of the basic terms, conditions, security and structure for the proposed financing. By submitting a response to the Authority's request on the form enclosed herein, it shall be understood that you agree in form and substance to all terms and conditions specified herein.
  
- B.) Audited Financial Statements:** To assist in your credit review, included in this email are the financial statements for the Authority for Fiscal Years 2012, 2013, 2014 and the 2015 Budget.



August 12, 2015  
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**C.) Proposal Form:** All interested proposers shall complete the enclosed form of proposal and submit a copy to the following:

Mr. Christopher M. Gibbons  
Concord Public Financial Advisors, Inc.  
2938 Columbia Avenue, Suite 1002  
Lancaster, PA 17603  
Telephone: (717) 295-2300  
Facsimile: (717) 295-2427  
Cgibbons@concordpublicfinance.com

The form of proposal shall be submitted via email, fax, or mail no later than Thursday, August 27, 2015 at 11:00 A.M. It is anticipated the Authority shall accept the winning proposal at a meeting on Monday, August 31, 2015. Proposals must remain valid until Thursday, September 10, 2015. The proposed settlement date will be on or about Thursday, October 29, 2015. Please feel free to contact Chris Gibbons (717) 295-2300 with any questions you may have.

The Authority appreciates your consideration in this regard and shall assist each interested financing institution in its credit review and analysis of the proposal. We look forward to your response.

Enclosures

**LEHIGH COUNTY AUTHORITY**  
**TERM SHEET**  
**WATER REVENUE BOND, 2015 A SERIES, (Suburban Water System)**  
**DATED AUGUST 12, 2015**

The Bank (the “Bank” or “Lender”) shall purchase the Water Revenue Bond, 2015 A Series, (Suburban Water System) (the “A Bond”), to be issued by the Lehigh County Authority, Lehigh County, Pennsylvania (the “Authority”) in the proposed principal amount of \$9,830,000, subject to the following terms and conditions set forth in this term sheet (the “Term Sheet”). The final principal amount of any one installment of principal of the A Bond or the principal amount of the A Bond itself shall not differ from the original principal amount thereof as presented on the attached Preliminary A Bond Amortization Schedule by more than \$983,000 (AMOUNT WILL NOT BE GREATER THAN \$10,000,000 IN ANY CASE). If the proposal of the Bank for purchase of the A Bond is accepted by the Authority, the Bank agrees to be legally bound to the terms of its proposal and this Term Sheet from the date of acceptance of its proposal to the Closing Date for the A Bond set forth below. A proposal submitted in response to the request for proposals to purchase the A Bond shall be subject to all provisions of this Term Sheet.

1. Use of Proceeds: Refund on a current period basis the Water Revenue Bond, Series of 2008, currently outstanding in the amount of \$9,465,000.
2. Term: The term of the A Bond shall be approximately eleven years, with a weighted average maturity of 7.75 years. The final principal payment is due on November 1, 2026.
3. Principal Payments: The principal of the A Bond shall be fully amortized over the term of the loan in an amount and in the manner as substantially set forth on the attached “Preliminary A Bond Amortization Schedule.”
4. Interest: Interest on the A Bond shall be calculated on the basis of the actual number of days elapsed, based upon a year of three hundred sixty (360) days comprised of twelve (12) thirty (30) day months, payable on May 1 and November 1, commencing May 1, 2016, at the rate set forth in the Form of Proposal. If any variable or adjustable rate is proposed, a maximum fixed rate per annum must be quoted.
5. Advances: All of the proceeds of the A Bond will be paid at closing, which shall be on or about October 29, 2015.
6. Optional Prepayment: The principal amount of the A Bond shall be subject to prepayment prior to maturity, at the option of the Authority, as a whole or, from time to time, in part, on any date, upon payment of the principal amount to be redeemed together with accrued interest thereon to the date fixed for prepayment and without any premium or penalty. Any partial prepayment of principal may be credited against such stated installments of principal on the A Bond as the Authority may designate in writing to the Bank at the time of prepayment; otherwise a partial prepayment shall be applied against the principal installments last, by date, due and payable.

7. Security: The A Bond will be issued by the Authority pursuant to and secured by a resolution duly adopted by the Authority (the “Resolution”). The A Bond shall be secured under a Trust Indenture dated as of November 1, 1984, as supplemented thereafter (collectively, the “Water Indenture”), all between the Authority and The Bank of New York Mellon, as Trustee (the “Trustee”). The A Bond will be equally and ratably secured, to the extent provided in the Indenture, with all Bonds currently outstanding under the Indenture and any Additional Bonds to be issued under the Indenture, by the pledge thereunder of all revenues, receipts and moneys derived from or in connection with the Water System by or on behalf of the Authority, including the Authority’s right, title and interest in all sums of money due and payable thereunder, and moneys held in certain funds created thereby, as more fully described in the Indenture. There will be no Debt Service Reserve Fund connected with the A Bond.

Neither the credit nor the taxing power the Commonwealth of Pennsylvania or any political subdivision thereof, is pledged for the payment of the A Bond.

8. Additional Liens on Authority Revenues. The Authority shall be permitted to issue additional debt and to secure such debt with a parity lien on Suburban Water System Water Revenues provided that the Authority presents an officer’s certificate of the Authority setting forth that, taking into account all debt service of the Authority, including the debt to be incurred, the Authority has sufficient revenues (calculated on a cash flow basis and not a GAAP basis) to pay 110% of either (i) in each fiscal year, the average annual debt service requirements calculated over the remaining life of the A Bond, on all long term indebtedness then outstanding, excluding any debt service requirements during any fiscal year to the extent that interest has been capitalized on said long term indebtedness, or (ii) in each fiscal year, an amount sufficient to pay the debt service requirements on such long term indebtedness for that fiscal year not otherwise provided for, plus the additional amounts, if any, required to be transferred to any fund under the terms of the Water Indenture, as supplemented.

9. Interest to be Tax-Exempt: The Authority will enter into such covenants as shall be necessary, in the opinion of King, Spry, Herman, Freund & Faul, LLC, Bethlehem, Pennsylvania, Bond Counsel, to assure compliance with the Internal Revenue Code of 1986, as amended (the “Code”), and to qualify interest on the A Bond for exclusion from gross income for federal income tax purposes as set forth in the opinion of Bond Counsel hereinafter mentioned. The Authority will designate the A Bond as a “qualified tax-exempt obligation” under Section 265(b)(3)(B) of the Code.

10. Loan Documents: Loan documents, including the Loan Agreement and form of A Bond embodying the terms hereof and of the accepted proposal, shall be prepared by Bond Counsel for the Authority, who shall provide the Lender and its Counsel with drafts of the loan documents for review and approval at least one week prior to loan closing.

11. Closing Documents: As a condition of closing the Authority shall deliver to the Lender the following:

- A. An Opinion of King, Spry, Herman, Freund & Faul, LLC, Bethlehem, Pennsylvania, Bond Counsel, substantially to the effect that: 1) the Authority is duly authorized and

empowered under the laws of the Commonwealth to issue the A Bond; 2) the A Bond is a valid and enforceable instrument of the Authority; 3) the A Bond is exempt from personal property taxes in the Commonwealth of Pennsylvania, and the interest on the A Bond is exempt from the Commonwealth of Pennsylvania Personal Income Tax and the Commonwealth of Pennsylvania Corporate Net Income Tax; 4) interest on the A Bond is not includible in gross income of the registered owner thereof for Federal income tax purposes under Section 103(a) of the Code; and 5) the Loan Agreement is a valid and binding obligation of the Authority and creates a valid and enforceable assignment and pledge of the receipts and revenues from the Water System;

- B. An affidavit or certificate of appropriate officers of the Authority and its Solicitor substantially to the effect that no litigation of any nature is pending or threatened: 1) seeking to restrain or enjoin or restraining or enjoining: (a) execution and delivery by the Authority of the A Bond or Loan Agreement; or (b) execution, authentication, issuance, delivery or sale of the A Bond; or 2) otherwise affecting the ability of the Authority to carry out the terms, provisions, covenants and agreements contained in Loan Agreement; or 3) in any manner affecting or questioning proceedings and authority of the Authority for execution, authentication, issuance, delivery or sale of the A Bond or the Loan Agreement; or 4) affecting, directly or indirectly, or questioning: (a) validity of the A Bond; or (b) creation, organization and existence of the Authority; or 5) affecting the ability of the Authority to undertake and to complete the undertakings to be financed with proceeds of the A Bond;
- C. Such other documents, certificates and instruments as shall be required by Bond Counsel to evidence compliance with, or to comply with, the provisions of the Code, and applicable regulations thereunder, with respect to the exclusion of interest payable on the Bond from gross income for federal income tax purposes.

12. Closing: It is anticipated that closing for the A Bond shall occur on October 29, 2015 or on such earlier or later date as shall be mutually agreeable to the Bank and the Authority. Closing shall occur at 10:00 a.m. on the Closing Date at the principal office of the Authority, or at such other time and place as is mutually acceptable to the Authority and the Lender

13. Fees and Expenses: The Authority shall pay all fees and expenses of Bond Counsel, Solicitor, and Financial Advisor and shall pay for the preparation and printing of the loan documents and for the filing of any required financing statements. The Authority shall also pay the Lender's fees subject to a maximum amount of \$2,500 as specified in the Lender's proposal.

14. Continuing Compliance: The Authority shall remit, when available, annual audited financial statements to the Lender, and any other information that the Lender shall reasonably request.

15. Rejection of Proposals: The Authority expressly reserves the right to reject any and all proposals received in connection with this request for proposals and term sheet and thereafter to negotiate with any proposer or other bank. The basis for acceptance of any proposal shall be that which is in the best interest of the Authority as determined solely by the Authority.

15. Amendment: The Authority reserves the right to amend or modify this Term Sheet by notifying the proposers via e-mail, no later than one day prior to the proposal due date, addressed to each proposer which at the time has its name and e-mail address on file with the Financial Advisor, a copy of a written amendment or modification hereto.

**Preliminary Bond Amortization Schedule**  
**Lehigh County Authority**  
**Water Revenue Bond, 2015 A Series**

<u>Date</u>	<u>Principal</u>
11/01/16	395,000
11/01/17	405,000
11/01/18	405,000
11/01/19	420,000
11/01/20	430,000
11/01/21	240,000
11/01/22	1,415,000
11/01/23	1,555,000
11/01/24	1,625,000
11/01/25	1,695,000
11/01/26	1,245,000
Totals	9,830,000

\*The final principal amount of any one installment of principal of the A Bond or the principal amount of the A Bond itself shall not differ from the original principal amount thereof as presented on the attached Preliminary A Bond Amortization Schedule by more than \$983,000.

**PROPOSAL**  
**LEHIGH COUNTY AUTHORITY**  
**Water Revenue Bond, 2015 A Series, (Suburban Water System)**  
**August 27, 2015**

The undersigned financial institution hereby agrees to purchase the Water Revenue Bond 2015 A Series, (Suburban Water System) (the “A Bond”), to be issued by the Lehigh County Authority, Lehigh County, Pennsylvania (the “Authority”) in the proposed principal amount of \$9,830,000 subject to the terms and conditions set forth in the term sheet (the “Term Sheet”) dated August 12, 2015, which is attached hereto and incorporated hereby by this reference. The final aggregate principal amount of any one principal installment of the A Bond or of the A Bond itself shall not differ from the principal amount of such installment or the entire A Bond itself as presented on the Preliminary A Bond Amortization Schedule by more than \$983,000 (AMOUNT WILL NOT BE GREATER THAN \$10,000,000 IN ANY CASE). The Bank agrees to be legally bound to such terms from the date of acceptance of this Proposal to the Closing Date of the Bond. *The undersigned understands if the savings are not adequate, the Authority will not proceed with the issuance of the A Bond.*

**Interest Rate.** The Authority shall only consider proposals which clearly express the rate of interest and/or the method of setting such rate of interest and the maximum rate of interest to be charged during the full term of the A Bond. Therefore, a qualified proposer must respond to I, II or III below, or all three if the bank wishes to provide options.

**I. Fixed Rate of Interest**

A fixed rate of interest for the full term of the A Bond equal to \_\_\_\_\_% per annum.

and/or

**II. Fixed/Variable Rate of Interest - (5 Year Fixed Rate, Variable Rate Thereafter)**

**Initial Interest Rate:** The initial interest rate on the A Bond shall be \_\_\_\_\_% for a period of approximately five years ending November 1, 2020.

**Interest Rate Reset:** After the initial interest rate period, the rate shall be reset at \_\_\_\_\_% of the 30 Day London Inter Bank Offering Rate (“30 Day LIBOR”) plus \_\_\_\_\_ basis points (or its equivalent).

**Maximum or Cap Interest Rate:** In no instance shall the interest rate ever exceed \_\_\_\_\_% (cannot exceed 3.75%).

and/or

**III. Fixed/Variable Rate of Interest - (8 Year Fixed Rate, Variable Rate Thereafter)**

**Initial Interest Rate:** The initial interest rate on the A Bond shall be \_\_\_\_\_% for a period of approximately eight years ending November 1, 2023.

**Interest Rate Reset:** After the initial interest rate period, the rate shall be reset at \_\_\_\_\_% of the 30 Day London Inter Bank Offering Rate (“30 Day LIBOR”) plus \_\_\_\_\_ basis points (or its equivalent).

**Maximum or Cap Interest Rate:** In no instance shall the interest rate ever exceed \_\_\_\_\_% (cannot exceed 3.75%).

**Cost & Expenses.**

The Bank shall request the reimbursement of its legal fees only, subject to a maximum of \$\_\_\_\_\_.

The Bank acknowledges that the Authority reserves the right to reject any and all proposals received in connection with this request for proposals.

**Any Additional Covenants:** \_\_\_\_\_

Respectfully submitted,

**Date:** \_\_\_\_\_

\_\_\_\_\_  
[Name of Bank]

By: \_\_\_\_\_  
Authorized Officer

\_\_\_\_\_  
[typed or printed name of officer]

Address:

\_\_\_\_\_  
[Address for Correspondence]

Tel. No. \_\_\_\_\_  
[Telephone Number]

Fax No. \_\_\_\_\_  
[Fax Number]

E-mail \_\_\_\_\_

ACCEPTED this \_\_\_ day of \_\_\_\_\_, 2015

LEHIGH COUNTY AUTHORITY

By: \_\_\_\_\_  
Authorized Officer

# RESOLUTION No. 8-2015-1

(Duly adopted August 31, 2015)

**AUTHORIZING THE ISSUANCE OF A WATER REVENUE BOND, SERIES A OF 2015, IN THE PRINCIPAL AMOUNT OF \$\_\_\_\_\_ (THE "BOND" OR "2015A BOND"), FOR THE PURPOSE OF THE REFUNDING ON A CURRENT BASIS THE AUTHORITY'S 2008 WATER REVENUE BONDS (THE "REFUNDING PROJECT"); AND SETTING FORTH SOURCES OF PAYMENT AND TERMS OF THE BOND; AUTHORIZING THE EXECUTION AND DELIVERY OF A SUPPLEMENTAL TRUST INDENTURE TO THE BANK OF NEW YORK ("TRUSTEE"), AND SECURING SAID BOND BY A PLEDGE OF CERTAIN REVENUES OF THE AUTHORITY AS SECURITY FOR PAYMENT OF THE BOND; AUTHORIZING EXECUTION AND DELIVERY OF THE BOND FOR AUTHENTICATION; AUTHORIZING THE APPROPRIATE OFFICIALS OF THE AUTHORITY TO ACCEPT AND ENTER INTO A COMMITMENT LETTER AND RELATED DOCUMENTATION REQUIRED ON BEHALF OF THE AUTHORITY; PROVIDING FOR THE SALE OF THE BOND PURSUANT TO SAID COMMITMENT LETTER; MAKING CERTAIN COVENANTS WITH RESPECT TO THE BOND; AND AUTHORIZING OTHER NECESSARY ACTION.**

## WITNESSETH:

WHEREAS, the Lehigh County Authority (the "Authority") is a body corporate and politic organized by the Board of the County Commissioners of Lehigh County, Pennsylvania (hereinafter called the "County") under the Municipality Authorities Act (the Act of June 19, 2001, as amended and supplemented), of the Commonwealth of Pennsylvania (hereinafter called the "Act"), as evidenced by its Certificate of Incorporation dated September 21, 1966; and

WHEREAS, pursuant to such incorporation, as amended, the Authority owns and operates, among other things, a suburban water system (the "Water System") in the Lehigh Valley; and

WHEREAS, the Authority previously issued \$14,700,000 aggregate principal amount of its Adjustable/Fixed Rate Water Revenue Bonds, 1984 Series (the "1984 Bonds") pursuant to a Trust Indenture (the "Original Indenture"), dated as of November 1, 1984, between the Authority and First Valley Bank now by successor The Bank of New York Mellon (the "Trustee") in regards to the Authority's Water System revenues ("Water Revenues"); and

WHEREAS, the Authority, under the Original Indenture, pledged the Authority's Water Revenues as security for the Authority's 1984 Bonds and future additional bonds issued under the Original Indenture and supplements thereto, on a party lien basis; and

WHEREAS, the Original Indenture and supplements thereto related solely to the Authority's suburban operations; and

WHEREAS, the Water Revenues pledged under the Original Indenture and supplements thereto do not relate to the Authority's City of Allentown operations but solely and exclusively to its suburban operations; and

WHEREAS, the Authority and the Trustee, or its predecessor in interest, previously entered into a series of the First through the Tenth Supplemental Indentures in connection with the Authority's issuance of additional bonds under the Original Indenture; and

WHEREAS, under the provisions of the Original Indenture by the issuance of Additional Bonds, the Authority then issued its 2008 Water Revenue Bonds, dated as of June 18, 2008 (the "2008 Bonds") in the original aggregate principal amount of \$10,000,000 for the purpose of the acquisition of Capital Additions as defined and as documented by the provisions of the Original Trust Indenture pursuant to the Sixth Supplemental Indenture dated June 18, 2008; and

WHEREAS, the Authority, for the purpose of interest rate savings and/or the elimination or modification of any covenants or restrictions deemed burdensome by the Authority, is interested in refunding its 2008 Bonds ("Refunding Project") on a current basis; and

WHEREAS, the Authority and Trustee is considering entering into additional supplemental indentures, including but not limited to a supplemental indenture related to this Refunding Project; and

WHEREAS, \_\_\_\_\_ (the "Lender" or "Purchaser") submitted its Proposal (the "Proposal"), dated August \_\_, 2015, for the purchase of the 2015A Bond and, after consultation with Concord Public Financial Advisors, Inc. ("Financial Advisor"), the Authority believes that it is in the best interest of the Authority to accept the Proposal and for the Authority to proceed with the sale of the 2015A Bond to the Lender pursuant thereto; and

WHEREAS, the Authority desires to authorize the issuance of the 2015A Bond and the undertaking of the Refunding Project, and desires to authorize the appropriate Officials to execute on behalf of the Authority a Commitment Letter constituting a bond purchase agreement (the "Bond Purchase Agreement") and any related documentation as required (the "Related Documentation"), between the Authority and \_\_\_\_\_ (the "Lender"), and to execute and to approve the form and substance of a supplemental indenture to bear such designation as deemed appropriate by the parties (the "Supplemental Indenture"), (the Original Indenture as supplemented by all prior supplemental indentures, being referred to collectively as the "Indenture"); and such other documents as shall be necessary or appropriate.

NOW, THEREFORE, BE IT RESOLVED by the Board of the Lehigh County Authority as follows:

1. Authorization of the Water Revenue Bond, 2015A Series and the Refunding Project:

a. The Authority hereby authorizes the issuance of its Water Revenue Bond, Series A of 2015, in the principal amount of \$\_\_\_\_\_ (the "2015A Bond") for the purpose of financing the Refunding Project. The 2015A Bond shall consist of one fully registered bond in the denomination of \$\_\_\_\_\_. The 2015A Bond shall be an obligation of the Authority, and shall bear interest payable at such times and at such rates and mature as shall be specified in the Bond Purchase Agreement, the Eleventh Supplemental Indenture and the 2015A Bond. The 2015A Bond shall bear interest from its original date on the principal balance outstanding from time to time until the Authority's obligation with respect to the payment of the principal thereof shall have been discharged, payable as specified in the Bond Purchase Agreement.

b. The Chairman, Assistant Chairman, Chief Executive Officer and Chief Financial Officer of the Authority are hereby authorized, empowered and directed to take all such further action and execute such additional documents and certificates as they may deem necessary and proper to carry out the purposes of this Resolution as well as to undertake and implement the Refunding Project as defined in the Preamble hereof. The Secretary, Assistant Secretary, Solicitor or Chief Administrative Officer is authorized to attest to their signature and apply the Authority seal thereto. Persons serving in all of the above named positions shall be deemed "Officials" for purposes of this Resolution.

c. The 2015A Bond shall be a direct obligation of the Authority and shall be secured by and payable from the Pledged Revenues (as defined in the

Original Indenture). The Bank is purchasing the Bond as an investment for its own account, and not with a view towards distribution or resale.

d. The 2015A Bond shall be subject to prepayment of principal and to such other terms and conditions as are set forth in the Supplemental Indenture and the 2015A Bond set forth therein and in the Bond Purchase Agreement.

e. All of the costs of issuance shall be paid by funds made available by the Authority.

## 2. Authorization of Supplemental Indenture.

a. The 2015A Bond shall be secured by and issued under the Original Indenture and the Supplemental Indenture.

b. The Supplemental Indenture shall be in form and substance as shall be approved by the appropriate Officials of the Authority, with the advice of counsel to the Authority, which approval shall be conclusively evidenced by the execution thereof. The appropriate Officials of the Authority are hereby authorized and directed to execute and acknowledge the Supplemental Indenture.

## 3. Execution of 2015A Bond - Delivery to the Trustee.

The 2015A Bond shall be executed by the manual signature of the appropriate Official of the Authority and by the actual impression of the Authority seal thereon, all attested by the manual signature of the Solicitor or Chief Administrative Officer of the Authority. The 2015A Bond shall thereupon be delivered to the Trustee for delivery to the Lender at Settlement.

4. Authorization and Execution of Assignment. The 2015A Bond is secured by the Assignment. The Assignment shall be in form and substance as shall be approved by the appropriate Officials of the Authority, with the advice of counsel to the Authority, which approval shall be conclusively evidenced by the execution thereof. The appropriate Officials of the Authority are hereby authorized and directed to execute, acknowledge and deliver the Assignment.

## 5. Award and Sale of 2015A Bond - Authentication and Delivery of 2015A Bond - Application of Proceeds.

a. The Authority hereby authorizes the appropriate Officials to enter into the Bond Purchase Agreement and Related Documentation as required and as approved by counsel, on behalf of the Authority providing for the Authority to sell the 2015A Bond to the Lender, for a purchase price specified therein and

determining the final terms and conditions of the 2015A Bond. The Authority hereby accepts the proposal of the Lender as contained in the Bond Purchase Agreement and the Related Documentation, and the appropriate officers and/or officials of the Authority are hereby authorized and directed, after executing the Bond Purchase Agreement and the Related Documentation, to deliver them to the Lender. The interest rates for the 2015A Bond established by the Lender and agreed to by the Authority is as set forth in Concord Public Financial Advisors, Inc. ("Financial Advisor") report dated August 31, 2015.

b. The Trustee is hereby requested to deliver the 2015A Bond upon the instructions of the appropriate Officials of the Authority to the Lender upon receipt of the purchase price thereof. Upon receipt of the purchase price for the 2015A Bond, the Trustee shall deposit the same in the 2015A Bond Settlement Account as authorized by the Supplemental Indenture, and if requested to do so shall pay the costs and expenses of the financing as finally ascertained and set forth in the Closing Statement signed by the appropriate Officials of the Authority.

#### 6. Federal Tax Code Covenants.

The Authority covenants with the registered owners of the 2015A Bond that no part of the proceeds of such 2015A Bond shall at any time be applied or spent for any purpose where such application or expenditure would cause, or be used directly or indirectly to acquire securities or obligations the acquisition of which would cause, the 2015A Bond to be an "arbitrage bond" or "private activity bond" as defined in Section 103 and Section 148 of the Internal Revenue Code of 1986, as amended and supplemented (the "Code"), or under any similar statutory provision or any rule or regulation promulgated thereunder, with the effect that interest on the 2015A Bond would no longer be exempt from federal income taxes.

7. Appointment of Professionals. The Authority appoints Concord Public Financial Advisors, Inc., its Financial Advisor, and King, Spry, Herman, Freund & Faul, LLC ("KingSpry") Bond Counsel, in regards to the Authority's issuance and sale of the Bond.

8. Further Authorization to Officials. The appropriate Officials of the Authority, or any other appropriate officers of the Authority, are hereby authorized and directed to deliver the certificates required under the Bond Purchase Agreement and the Supplemental Indenture in connection with the issuance of the 2015A Bond, and to execute and deliver such further documents and to take such further action as may be necessary or expedient in order to carry out the terms of the Supplemental Indenture and the intent and purpose of this Resolution.

9. Severability. In the event any provision, section, sentence, clause or part of this Resolution shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Resolution, it being the intent of the Authority that such remainder shall be and shall remain in full force and effect.

10. Repealer. All prior Resolution or parts thereof inconsistent herewith, are hereby repealed, but only so far as they are inconsistent.

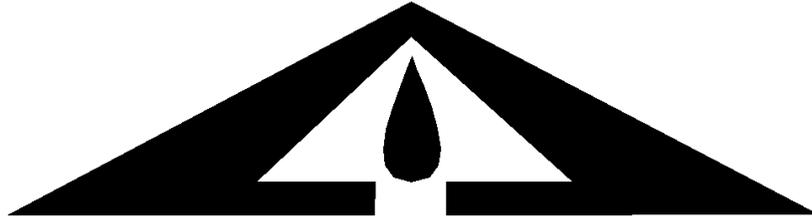
11. Effective Date. This Resolution shall become effective immediately.

On motion of \_\_\_\_\_, seconded by \_\_\_\_\_, this resolution was adopted the 31st day of August, 2015.

∞ ∞

I, Bradford E. Landon, Solicitor of Lehigh County Authority, do hereby certify that the foregoing is a true, correct and complete copy of a resolution which was duly adopted by the Authority at a public meeting of the Authority held on the 31st of August, 2015, after notice thereof had been duly given as required by law, at which meeting a quorum was present and voting and which resolution No. 8-2015-1 is now in full force and effect on the date of this certification.

\_\_\_\_\_  
Bradford E. Landon, Solicitor



**LEHIGH COUNTY AUTHORITY**

**2014 BENCHMARK OVERVIEW**

**LEHIGH COUNTY AUTHORITY  
2014 BENCHMARK OVERVIEW**

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## **2014 Benchmark Overview**

Attached are 20 Benchmarks which we have used to gauge our performance across a broad range of LCA activities.

A couple of notes to facilitate your review:

- The Performance Goal is shown on all graphs as a red line. The results in blue reflect Suburban Division performance and the results in gold, reflect City performance;
- Sometimes achievement occurs when the performance is above the red line, sometimes below and sometimes on the line. Each Benchmark explains when achievement occurs as indicated in the notes below the graph;
- Six of the Benchmarks show both City and Suburban Division performance. As time passes, we will add City Division performance for each metric;
- In addition to the Goal line, 5 of the Benchmarks also have a Level 1 and Level 2 Goals which reflect enhanced achievement. Those goal levels were initially established under the Authority's bonus program which was ended in 2013 and;
- When a Goal is referenced by a number that number refers to the page on which the Benchmark is presented.

We expect that these Benchmarks will be reviewed and refined overtime to improve their relevance to critical performance areas.

For 2014, the Suburban Division met all goals except Customers Receiving Delinquency Notices (12), Wastewater Treatment Effectiveness (14) and Unaccounted for Wastewater Flow (20).

The City Division met 2 out of 6 goals, Bond Coverage (3) and Net Final Project Cost (10).

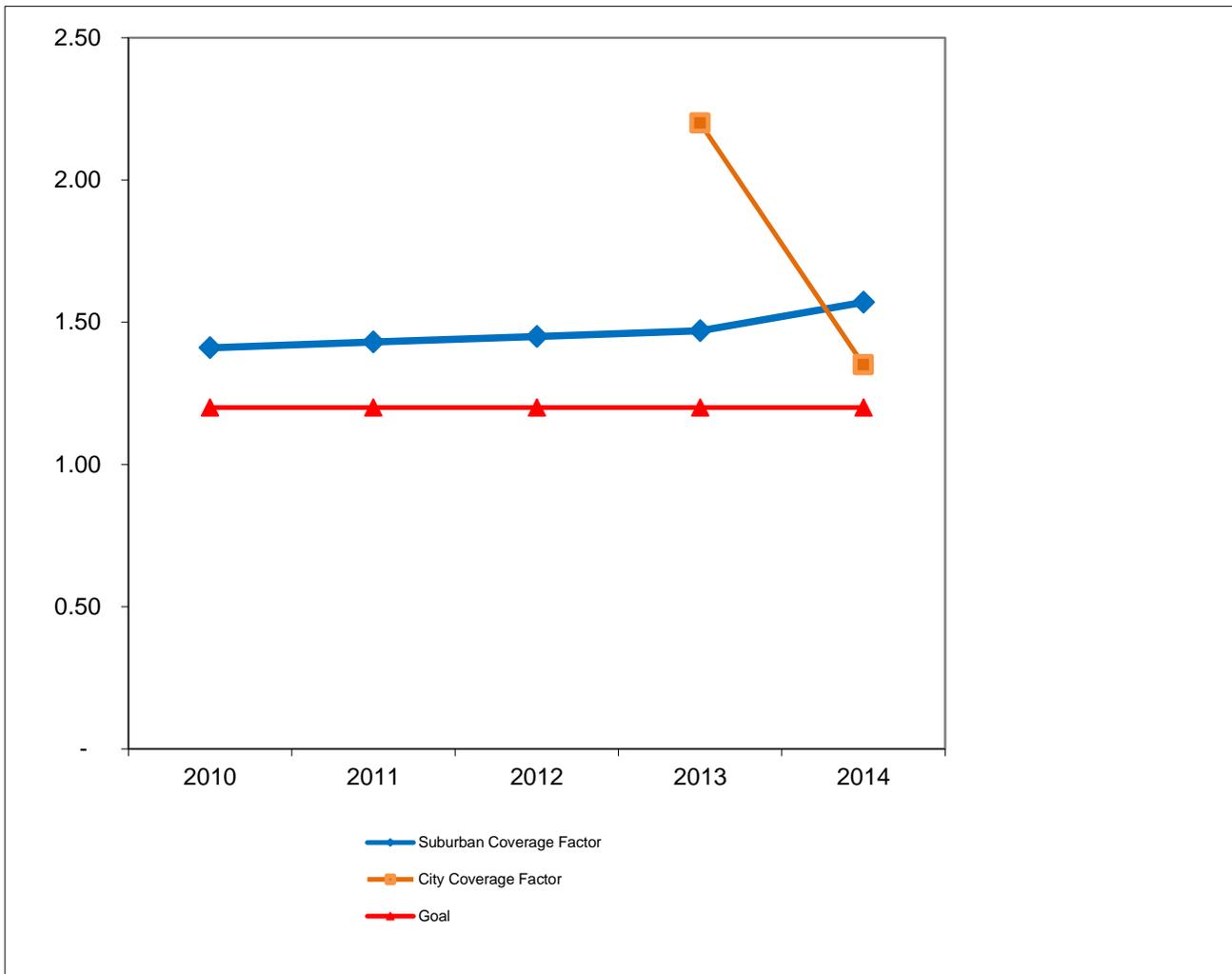
**Issue:** Bond Coverage

**Benchmark Factor:** Bond Coverage.

**Measurement Objective:** To determine the factor of net operating revenues divided by debt service.

**Goal:** To exceed a 1.20 operating coverage.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Suburban Coverage Factor	1.41	1.43	1.45	1.47	1.57
City Coverage Factor				2.20	1.35
Goal	1.20	1.20	1.20	1.20	1.20



***Achievement reflects results above the horizontal line.***

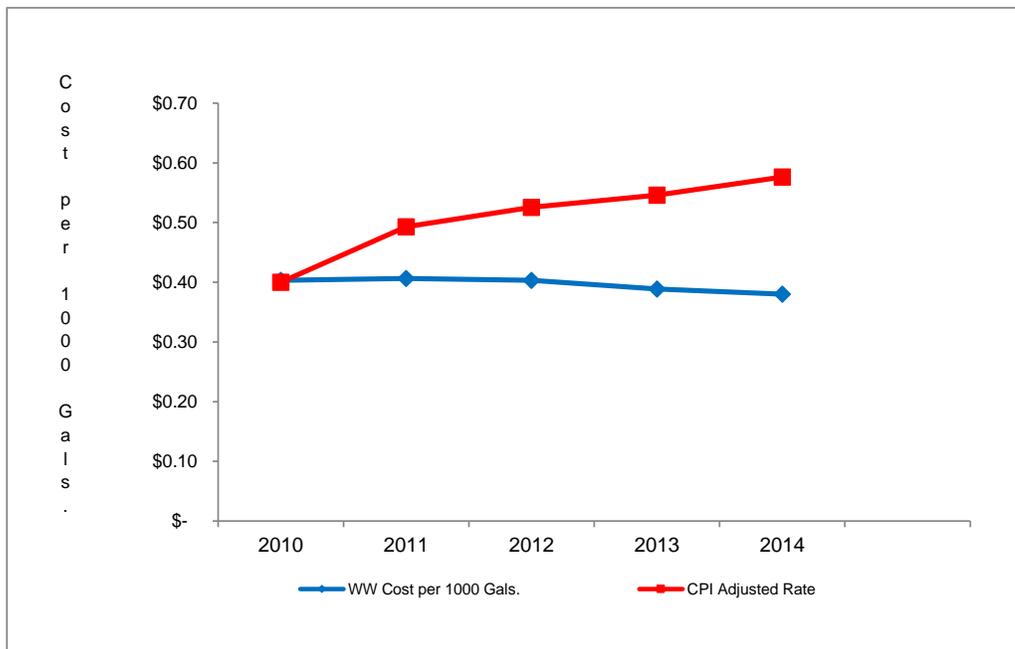
**Issue:** Financial Management

**Benchmark Factor:** Actual Wastewater Cost - Suburban Division.

**Measurement Objective:** To measure effectiveness in maintaining cost stability.

**Goal:** To maintain the cost per 1000 gallons at a level less than the increase in the CPI Index - Utility Component for Water and Sewer Line Maintenance over a 5 year period.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
WW Cost per 1000 Gals.	\$ 0.40	\$ 0.41	\$ 0.40	\$ 0.39	\$ 0.38
CPI Adjusted Rate	\$ 0.40	\$ 0.49	\$ 0.53	\$ 0.55	\$ 0.58



**Achievement reflects results below the goal line.**

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Cumulative CPI Growth	6.80%	12.40%	19.90%	24.50%	31.40%

**Comment:** The cost per 1000 gallons is below the cumulative inflation trend over the past 5 years.

**Note:** The costs are for the Western Lehigh Interceptor System, Little Lehigh Relief Interceptor Systems and the Common Rate Collector Systems.  
 This benchmark only tracks Suburban Division operating costs and excludes City Division costs, amortized planning and equipment costs and debt service.

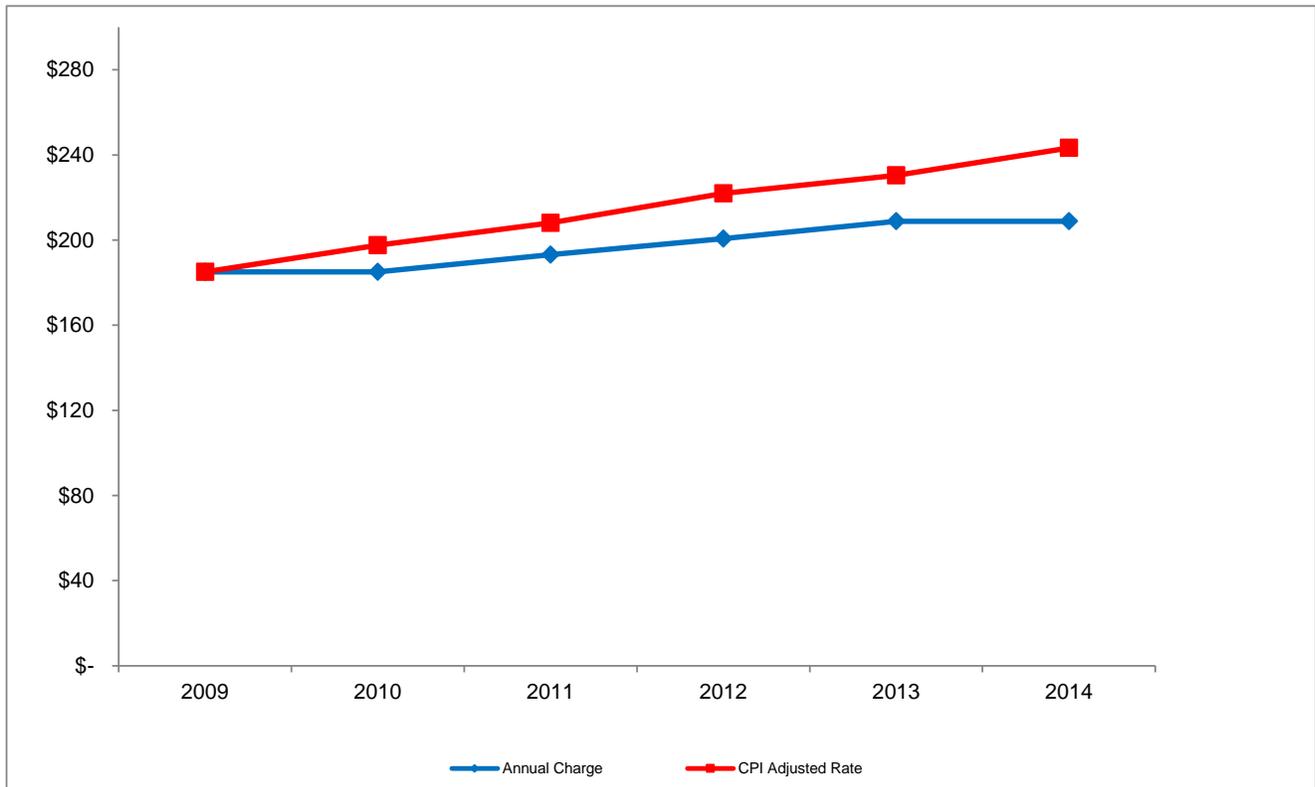
**Issue:** Financial Management

**Benchmark Factor:** Budgeted Water Charges - Suburban Division.

**Measurement Objective:** To measure effectiveness in maintaining suburban water cost stability.

**Goal:** To maintain rates at a level less than the increase in the CPI Index - Utility Component for Water and Sewer Line Maintenance over a 5 year period.

	2009	2010	2011	2012	2013	2014
Annual Charge	\$ 185.04	\$ 185.04	\$ 193.14	\$ 200.70	\$ 208.80	\$ 208.80
CPI Adjusted Rate	\$ 185.04	\$ 197.54	\$ 208.03	\$ 221.90	\$ 230.40	\$ 243.26



**Achievement reflects results below the goal line.**

**Comment:** As shown above, charges to the typical Suburban Division residential customer have tracked well below cumulative inflation. In 2011 and 2012 rate increases took effect 4/1.

**Note:** The annual charge is for the typical residential customer using 18,000 gallons per quarter under common rates.

**Criteria:** Service Reliability

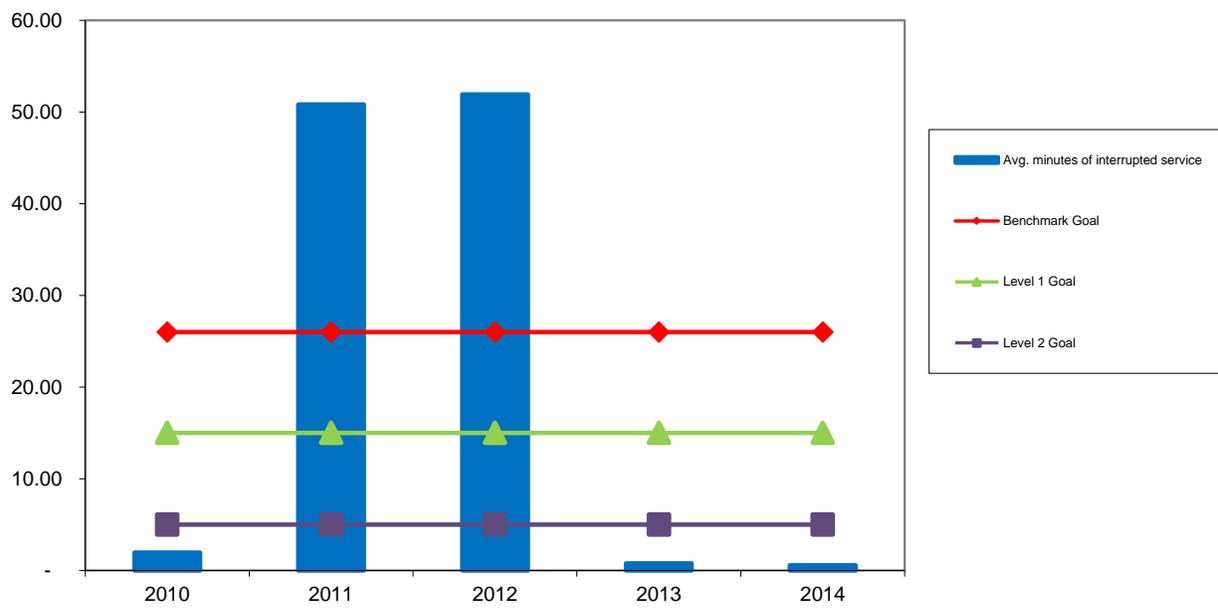
**Benchmark Factor:** Water Service Outages - Suburban Division.

**Measurement Objective:** % of time customers are provided with water service.

**Benchmark Goal:** 99.995% reliability or less than 26 minutes of outages per customer per year.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Avg. minutes of interrupted service	1.96	50.82	51.91	0.75	0.56
Benchmark Goal	26.00	26.00	26.00	26.00	26.00
Level 1 Goal	15.00	15.00	15.00	15.00	15.00
Level 2 Goal	5.00	5.00	5.00	5.00	5.00

\* Through December



*Achievement reflects results below the horizontal lines.*

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total Customer Hours	172,746,624	176,645,400	178,842,240	180,657,480	182,532,120
Total Customer Outage Hrs.	646	17,081	17,616	259	196
Total Customer Units Served	19,780	20,165	20,360	20,623	20,837

The high outage figure in 2011 was a direct result of Hurricane Irene and the snowstorm in October. The 2012 results reflect significant outages from Hurricane Sandy. Hurricane Sandy added 15,724 hours to the total customer outage hours.

**Criteria:** Customer Satisfaction - Suburban and City Divisions

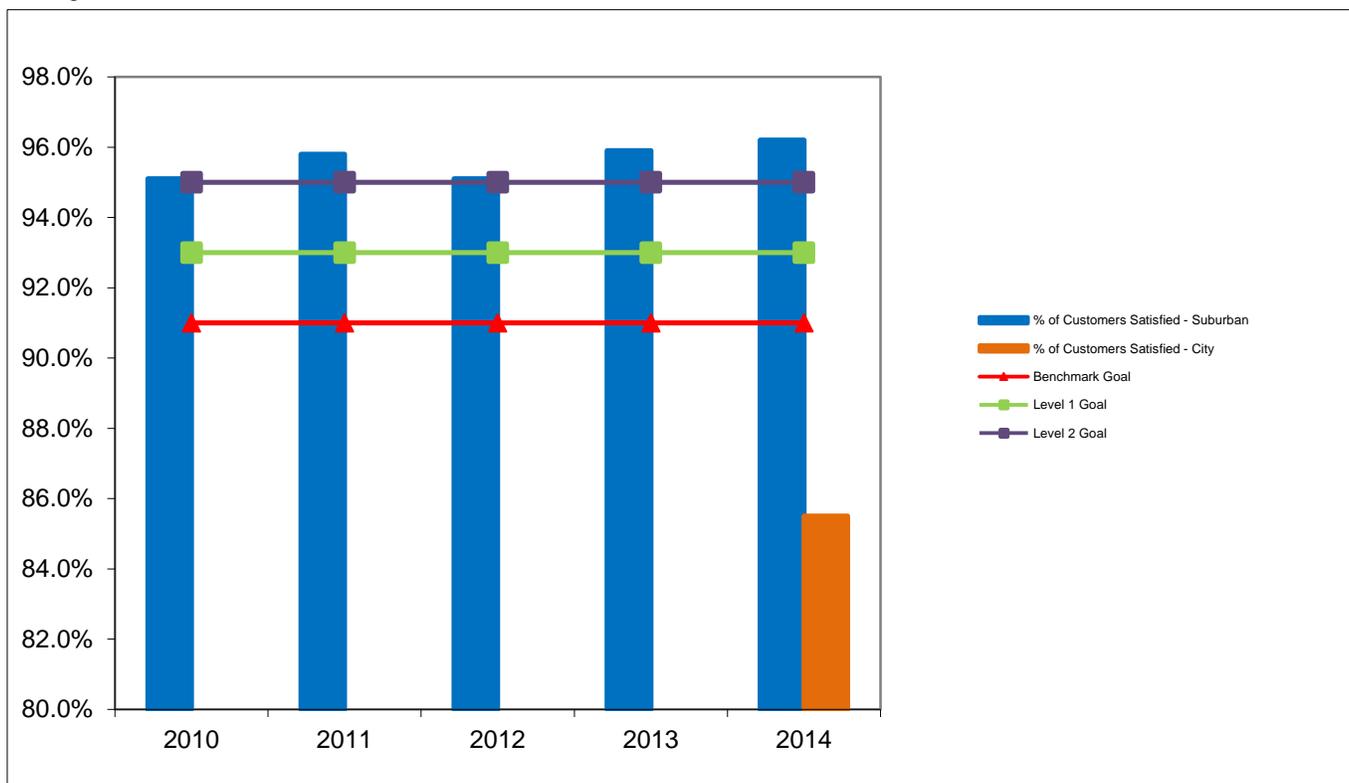
**Benchmark Factor:** Customer Service satisfaction as measured by a Survey.

**Measurement Objective:** Using semiannual postcard surveys to customers with recent contact with LCA personnel, determine the level of customer satisfaction with LCA's customer service.

**Goal:** 91% of responses satisfied or above.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
% of Customers Satisfied - Suburban	95.1%	95.8%	95.1%	95.9%	96.2%
% of Customers Satisfied - City					85.5%
Benchmark Goal	91.0%	91.0%	91.0%	91.0%	91.0%
Level 1 Goal	93.0%	93.0%	93.0%	93.0%	93.0%
Level 2 Goal	95.0%	95.0%	95.0%	95.0%	95.0%

\* Through December



*Achievement reflects results above the horizontal lines.*

**Comment:** This graph reflects tracking customer service satisfaction for those having contact with LCA personnel.

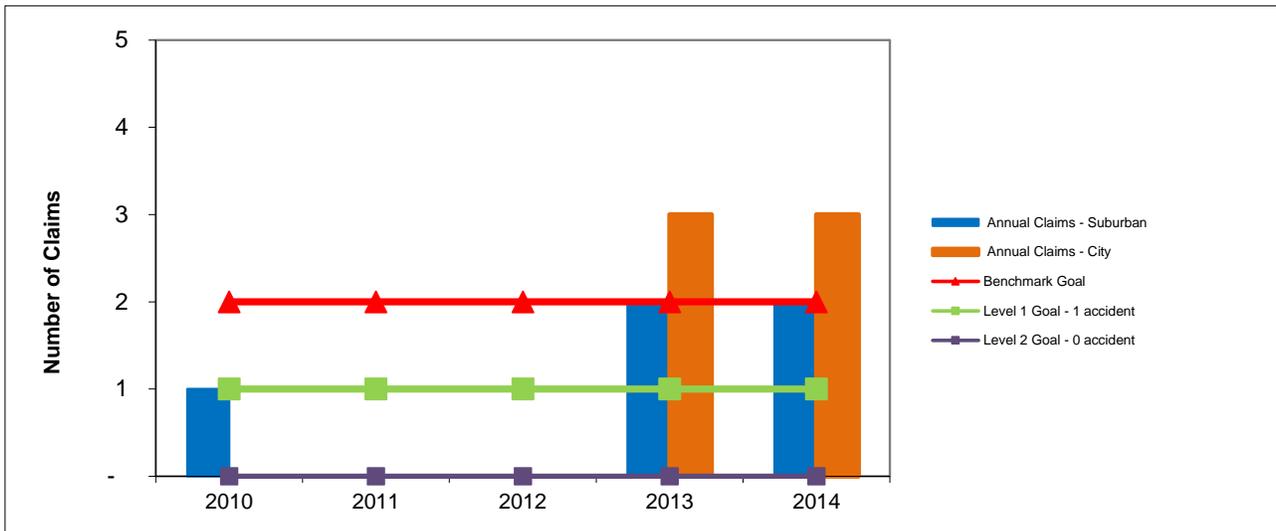
**Criteria:** Safety - Suburban and City Divisions

**Benchmark Factor:** Number of claims reported to Worker's Compensation.

**Measurement Objective:** To measure the effectiveness of the Safety program.

**Goal:** To have no more than 2 chargeable injuries per year with with an ultimate goal of no claims.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Annual Claims - Suburban	1	-	-	2	2
Annual Claims - City				3	3
Benchmark Goal	2	2	2	2	2
Level 1 Goal - 1 accident	1	1	1	1	1
Level 2 Goal - 0 accident	-	-	-	-	-



**Achievement reflects results below the horizontal lines.**

Definition of Claim: Loss of consciousness, one day of lost time or Medical treatment beyond first aid.

**Criteria:** Efficiency

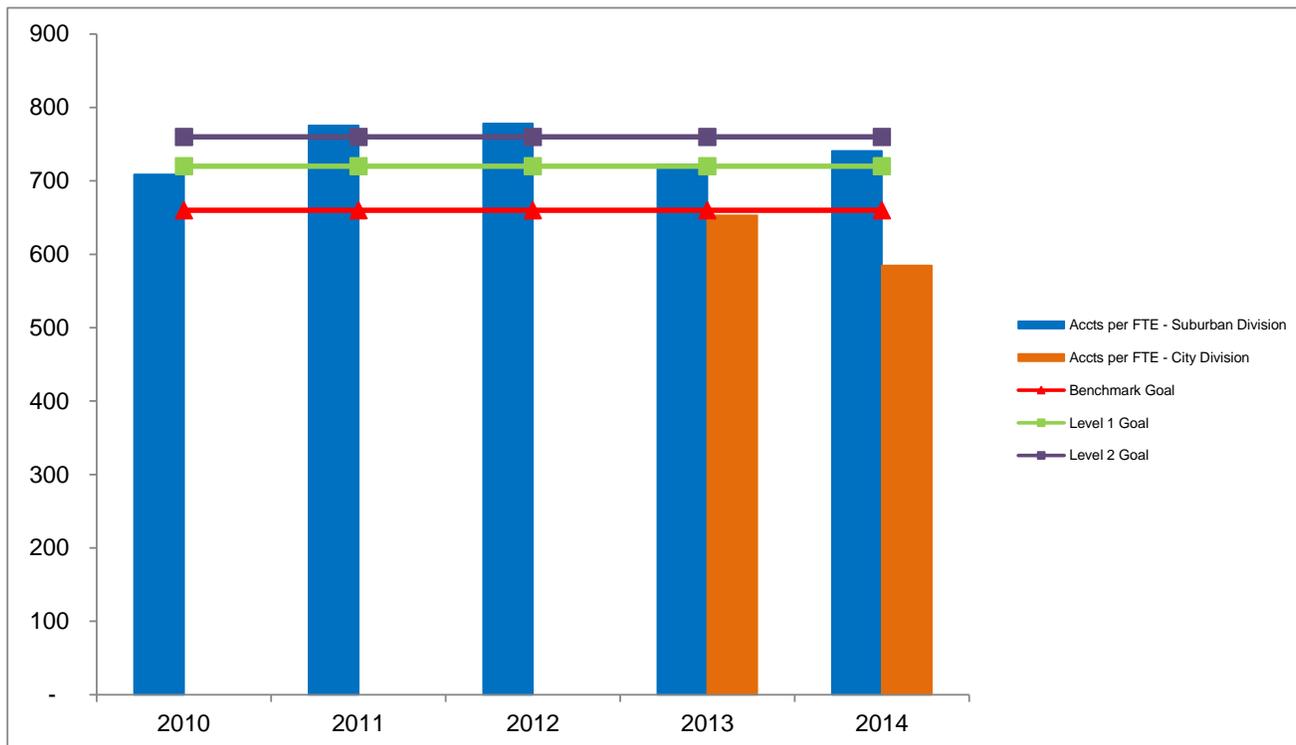
**Benchmark Factor:** # of Customer Retail Accounts per Fulltime Employee Equivalent (FTE) - Water & Wastewater Systems.

**Measurement Objective:** To determine the efficiency of LCA operations on a per customer basis.

**Goal:** To achieve a ratio of 660 Customer accounts per employee. \*

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Accts per FTE - Suburban Division	709	776	778	722	741
Accts per FTE - City Division				653	585
Benchmark Goal	660	660	660	660	660
Level 1 Goal	720	720	720	720	720
Level 2 Goal	760	760	760	760	760

\* City Division effective 8/8/13



**Achievement reflects results above the horizontal lines.**

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
# of Customer Accounts -Suburban (A)	20,065	20,166	21,114	21,413	21,643
# of Customer Accounts - City (A)				66,594	66,654
Number of Fulltime FTE's - Suburban	28.31	26.00	27.14	29.65	29.22
Number of Fulltime FTE's - City				102.00	114.00

(A) Includes number of customer accounts for water & collector systems.

Comment: Prior to 2011 this benchmark was calculated by dividing the number of units served by fulltime equivalent units (FTE) of the water operations. Beginning in 2011, the calculation uses the total number of water system and wastewater collector system accounts divided by total water and wastewater operations FTE's. Prior year numbers have been recalculated using the current formula.

**Criteria:** Capital Project Execution

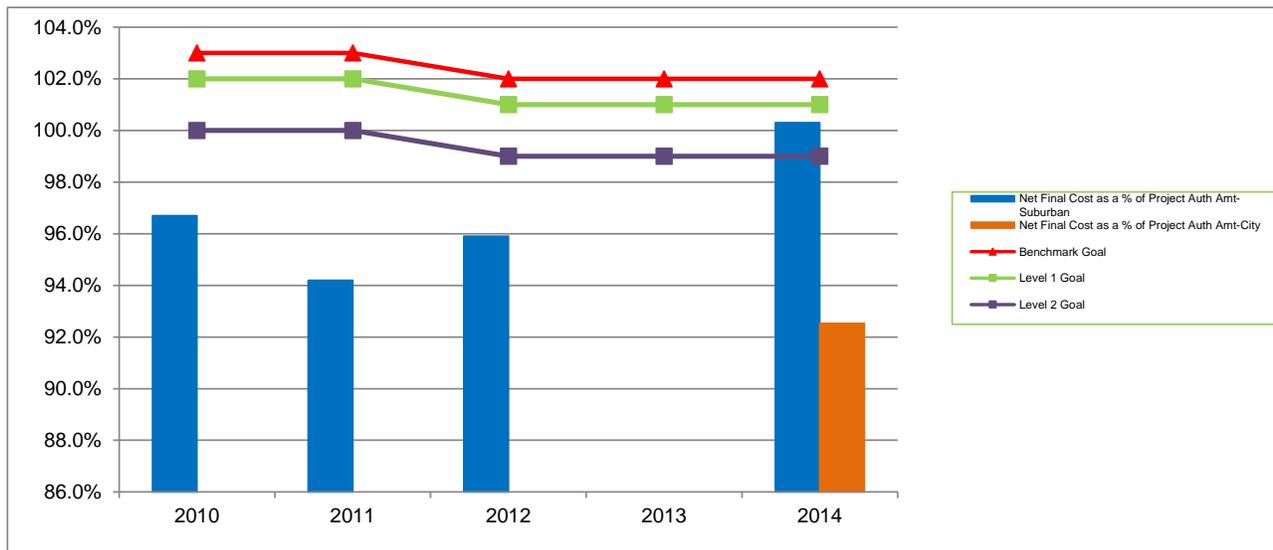
**Benchmark Factor:** Net Final Project Costs.

**Measurement Objective:** To measure Net Final Project Cost (1) as a percentage of the Project Authorization Amount to determine the effectiveness of controlling overall project costs.

**Goal:** Net Final Project Costs should not exceed 105.0% of the Project Authorization Amount.

\*

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Net Final Cost as a % of Project Auth Amt-Suburban	96.7%	94.2%	95.9%		100.3%
Net Final Cost as a % of Project Auth Amt-City					92.5%
Benchmark Goal	103.0%	103.0%	102.0%	102.0%	102.0%
Level 1 Goal	102.0%	102.0%	101.0%	101.0%	101.0%
Level 2 Goal	100.0%	100.0%	99.0%	99.0%	99.0%



*Achievement reflects results below the horizontal lines.*

Net Final Project Cost (NFPC) = Final Project Cost (FPC) less the cost of out-of-scope and/or added value changes.

**Comment:** In 2011 the goal levels were made more stringent and the results reflect the removal of contingencies in calculating final results.

**Projects Completed:**

- 2014 - Suburban Division- Western Weisenberg WWTP, Emergency Power Project, LCA WWTP Digester Mixer and Receiving Station, AWIP Pump Station Upgrades.
- City Division - Cycle 1 Main Replacements, SSES Work, Cycle 1 Manhole Lining, and Cycle 1 Water Tight Manhole Covers

\* 2013 - No projects were completed

- 2012 - Meter/MXU/BF Program - Ph2, LCA-COA Interconnection Ph 2, PPS Comminutor Replacement Knowledge Management, IT Master Plan and Groundwater Rule.

- 2011 - Energy Related Services, WL-1 Chlorine Contact Tank Upgrades, Meter/MXU/BF Program - Ph1, Water Sys Hydraulic Model and WLI Hydraulic Model - Phs 1 & 2.

- 2010 - Flow Equalization Basin, Office Operation Center, City of Allentown Interconnection - Ph 1, WL-8 Upgrade, S. 7th St Ph 2 and FIS Purchase & Implementation

**Issue:** Financial Management

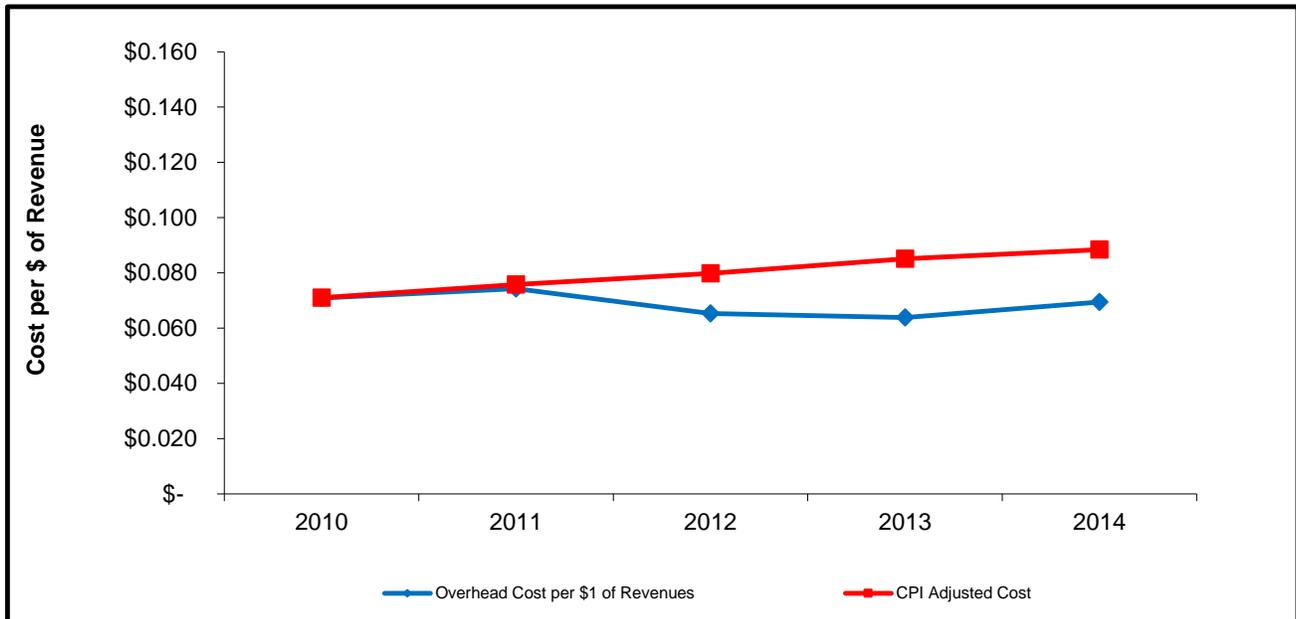
**Benchmark Factor:** Overhead Costs per \$1 of Total Revenues.

**Measurement Objective:** To determine the efficiency of controlling Internal Service costs.

**Goal:** To maintain costs at a level less than the increase in the CPI Index - Water and Sewer Line Maintenance.

	*				
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Overhead Cost per \$1 of Revenues	\$ 0.071	\$ 0.074	\$ 0.065	\$ 0.064	\$ 0.069
CPI Adjusted Cost	\$ 0.071	\$ 0.076	\$ 0.080	\$ 0.085	\$ 0.088

\* Through December



**Achievement reflects results below the goal line.**

	*				
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Overhead Costs	\$ 1,529,057	\$ 1,637,719	1,667,760	2,544,842	4,144,111
Total Revenues	21,574,718	22,047,969	25,523,804	39,872,967	59,668,798
Cumulative CPI Growth	6.75%	12.41%	19.91%	24.5%	31.4%

**Comment:** Overhead costs per \$1 of revenue has remained below inflation adjusted costs.

**Issue:** Financial Management

**Benchmark Factor:** % of Customers not receiving a delinquency notices in Suburban and City Divisions.

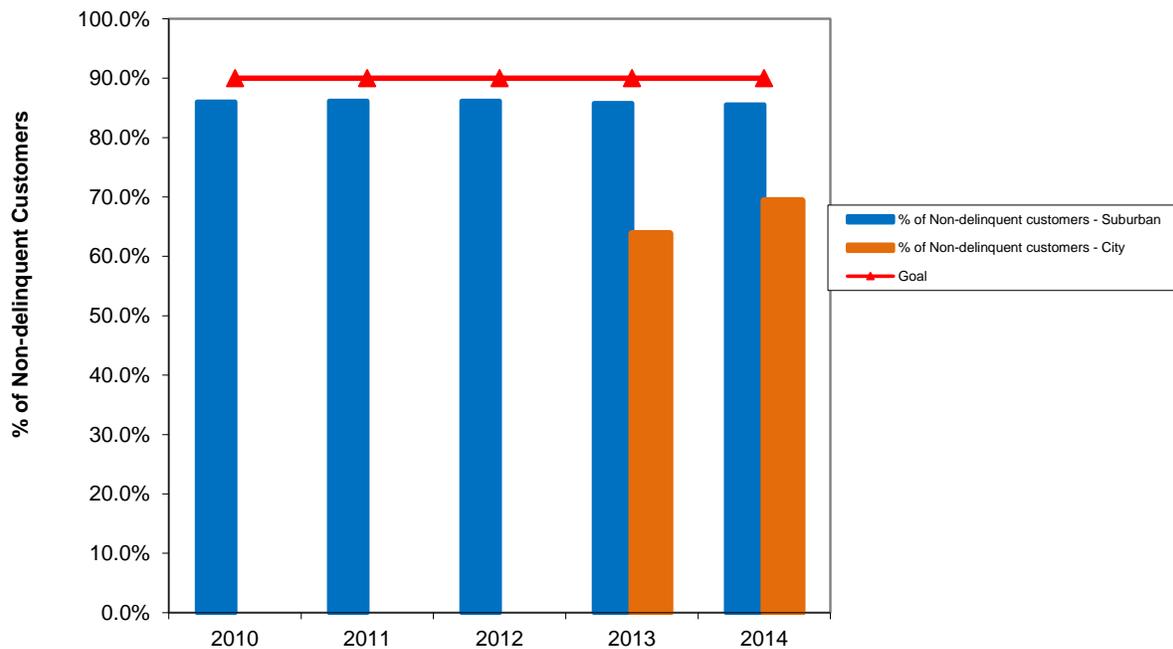
**Measurement Objective:** To measure the efficiency of the collection process for the Water System.

**Goal:** To maintain non-delinquent customer level to 90.0% or more of initial billings.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
% of Non-delinquent customers - Suburban	86.0%	86.2%	86.2%	85.8%	85.5%
% of Non-delinquent customers - City				63.8%	69.4%
Goal	90.0%	90.0%	90.0%	90.0%	90.0%

\*

\* Through December



**Achievement reflects results below the horizontal line.**

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
# of Past Due Notices - Suburban	10,846	10,965	11,297	11,857	12,214
# of Past Due Notices - City				16,410	41,298
# of Initial Billings - Suburban	77,616	79,309	81,684	83,310	84,407
# of Initial Billings - City				45,349	134,833

\*

**Issue:** Service Reliability

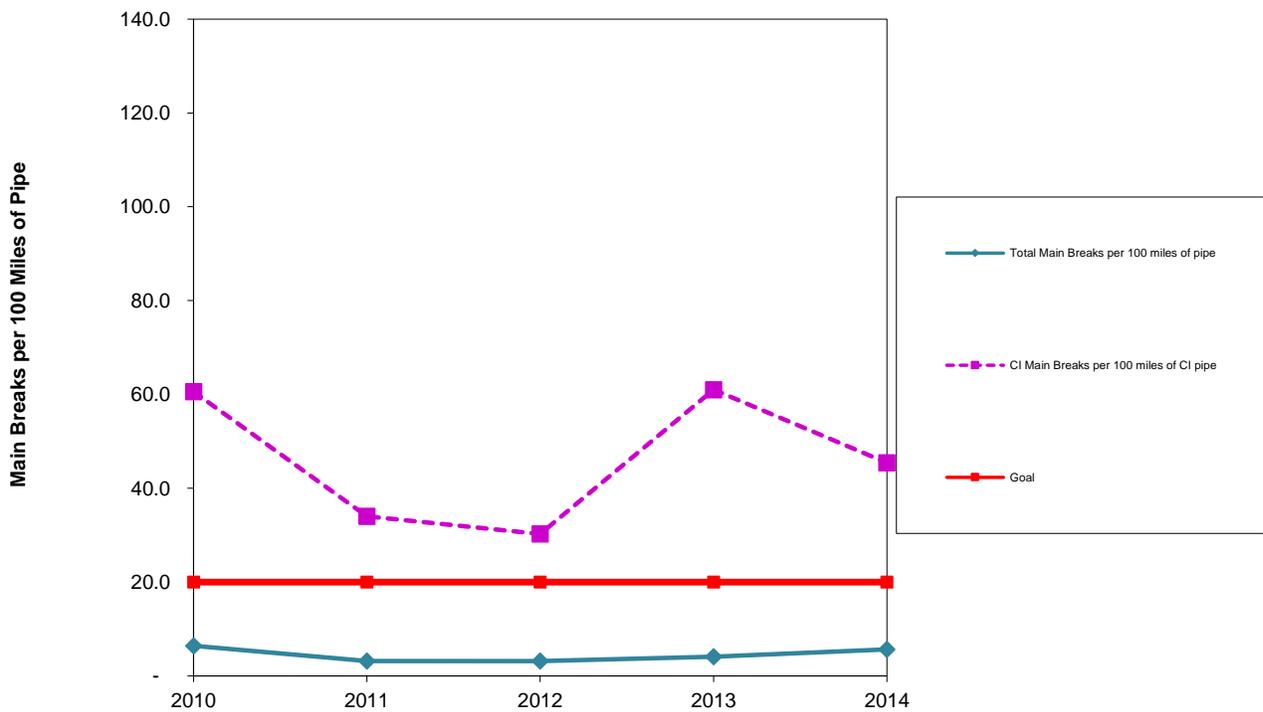
**Benchmark Factor:** Water Main Breaks - Suburban Division.

**Measurement Objective:** Number of Water Main Breaks per 100 Miles of Pipe.

**Goal:** 20 or Fewer per Year.

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total Main Breaks per 100 miles of pipe	6.4	3.2	3.2	4.1	5.6
CI Main Breaks per 100 miles of CI pipe	60.6	34.0	30.3	61.0	45.4
Goal	20.0	20.0	20.0	20.0	20.0

\* Through December



*Achievement reflects results below the horizontal line.*

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
CI Main Breaks	16	9	8	8	8
Total Main Breaks	20	10	10	13	18
Miles of Water Main	311.3	312.1	316.0	318.4	319.9
Miles of CI Water Main	26.4	26.4	26.4	26.4	26.4

**Comment:** As shown, cast iron mains accounted for most of the Authority's main breaks during the past 4 3/4 years. The ongoing main replacement project should further reduce such breaks as the amount of CI pipe diminishes.

**Note:** The miles of CI pipe were determined per a system inventory of all water divisions. All years presented include adjustments for acquisitions and main replacements.

**Issue:** Service Reliability

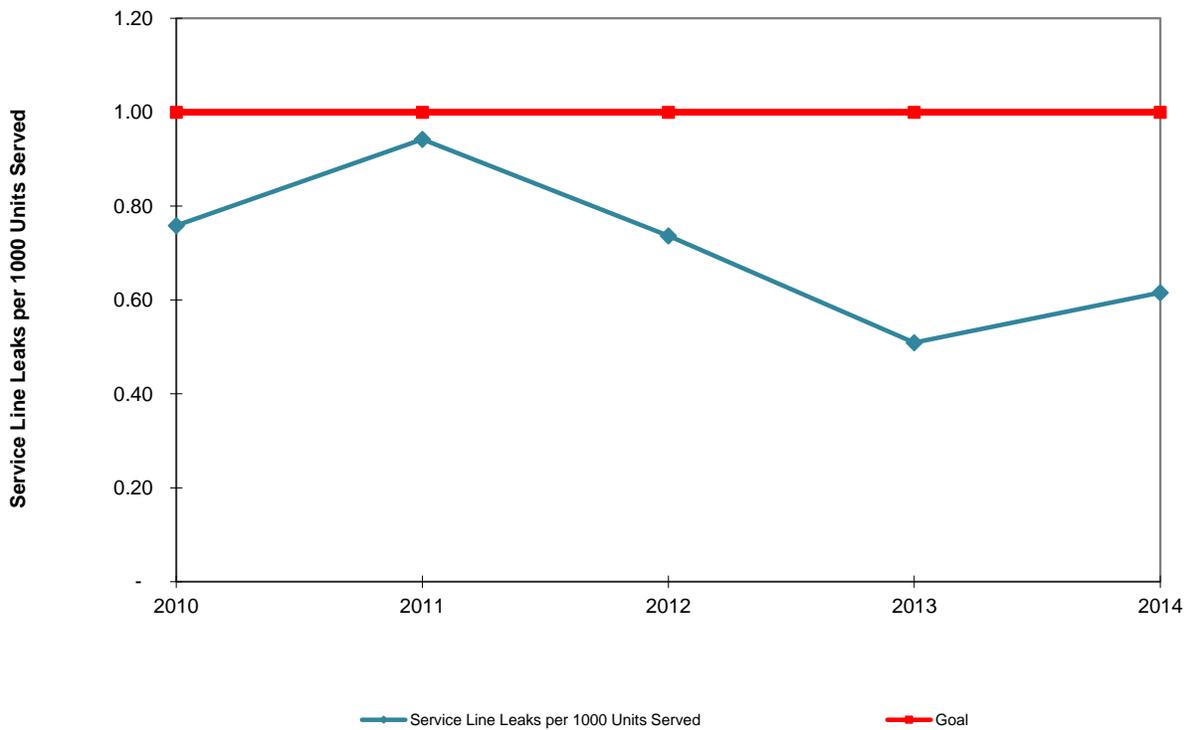
**Benchmark Factor:** Service Line Leaks - Suburban Division.

**Measurement Objective:** Number of Service Line Leaks per 1000 Units Served Services per Year.

**Goal:** 1.00 Service Line Leak per 1000 Units Served.

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Service Line Leaks per 1000 Units Served	0.76	0.94	0.74	0.51	0.62
Goal	1.00	1.00	1.00	1.00	1.00

\* Through December



**Achievement reflects results below the horizontal line.**

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Service Line Leaks	15	19	15	9	11
Number of Units Served	19,780	20,165	20,360	20,623	20,837

**Issue:** Water Quality

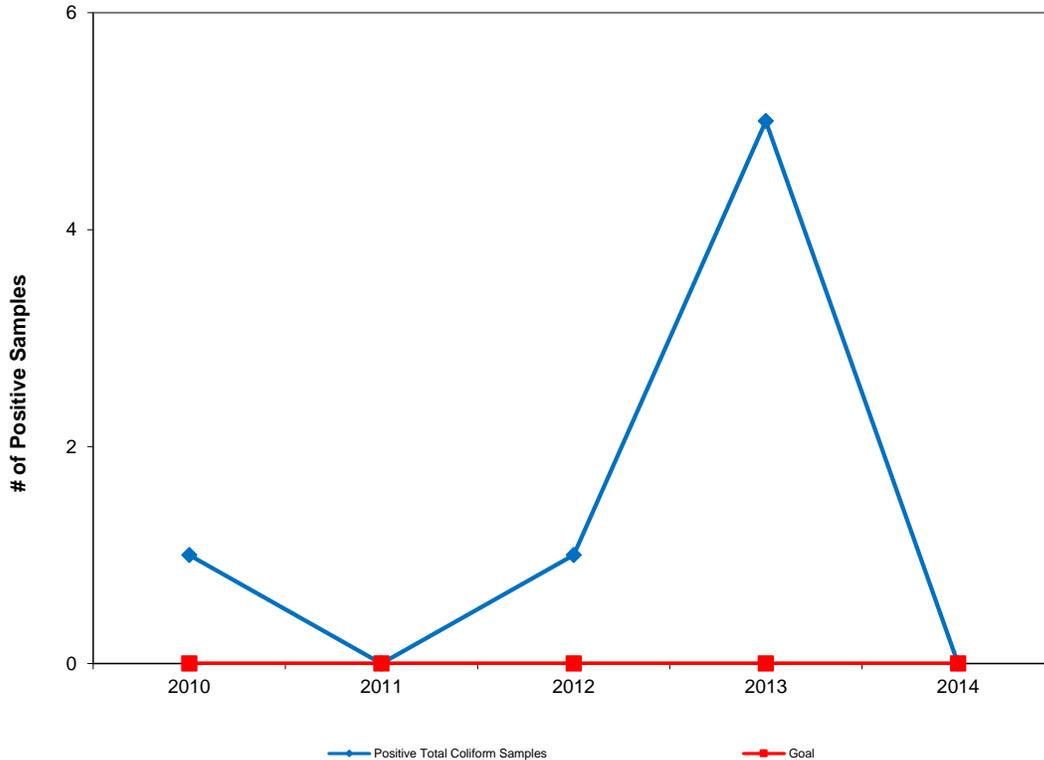
**Benchmark Factor:** Total Coliform Bacteria Monitoring - Suburban Division.

**Measurement Objective:** To measure water quality delivered to the customer using the number of Positive Total Coliform Samples as an indicator.

**Goal:** Zero Positive Total Coliform Samples.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Positive Total Coliform Samples	1	0	1	5	0
Goal	0	0	0	0	0

\* Through December



*Achievement reflects results on the horizontal line.*

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Pos.Tot. Coliform Samples - CLD	1	0	0	3	0
Pos.Tot. Coliform Samples - NWD	0	0	0	1	0
Pos.Tot. Coliform Samples - WTD	0	0	1	1	0
Pos.Tot. Coliform Samples - MCD	0	0	0	0	0
Pos.Tot. Coliform Samples - UMD	0	0	0	0	0
Pos.Tot. Coliform Samples - PLD	0	0	0	0	0
Pos.Tot. Coliform Samples - HHD	0	0	0	0	0
Pos.Tot. Coliform Samples - AWD	0	0	0	0	0
Pos.Tot. Coliform Samples - BHD	0	0	0	0	0
Pos.Tot. Coliform Samples - EMM	0	0	0	0	0
Pos.Tot. Coliform Samples - UCD	0	0	0	0	0
Pos.Tot. Coliform Samples - CFD	0	0	0	0	0
Pos.Tot. Coliform Samples - MPN	-	0	0	0	0

**Comment:** In 2010, a sample within the Highgate subdivision tested positive for total coliform bacteria but a check sample and source water samples tested negative. In 2012, an outside tap on Welshtown Road tested positive but a check sample result was negative. In 2013, all samples that tested positive had check sample results that were negative.

**Issue:** Water Quality

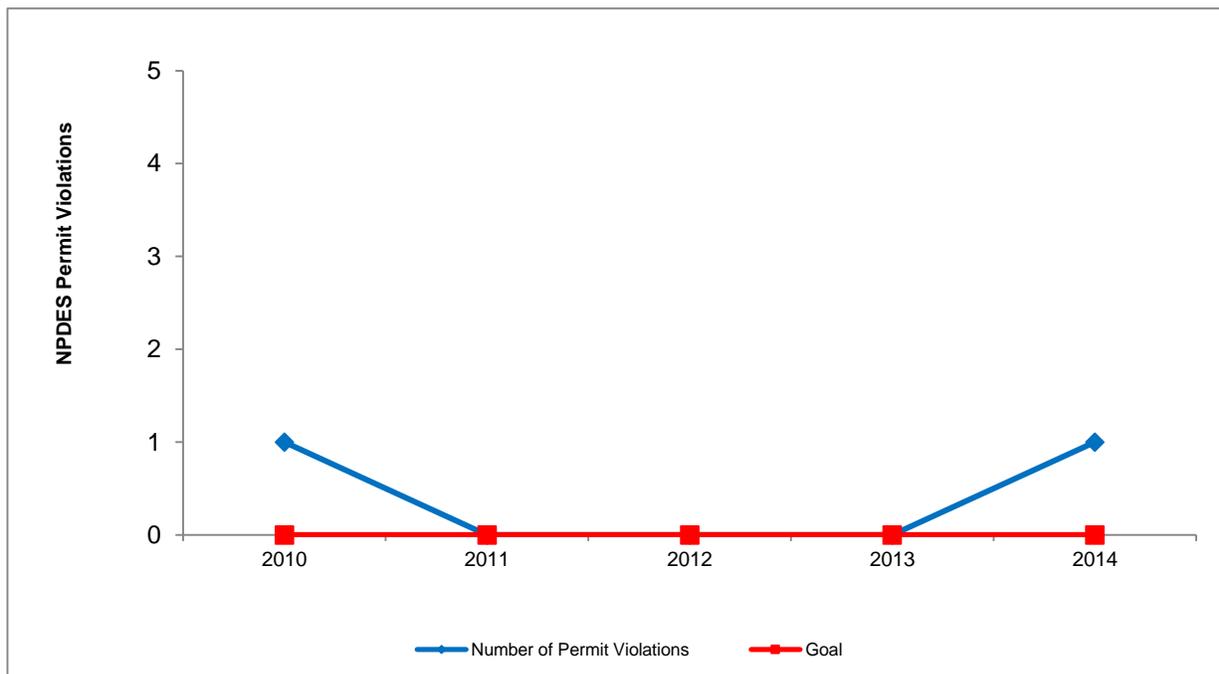
**Benchmark Factor:** Wastewater Treatment Effectiveness - Suburban Division.

**Measurement Objective:** Number of NPDES Permit Violations Annually at the LCA collector system treatment plants.

**Goal:** Zero per Year.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Number of Permit Violations	1	0	0	0	1
Goal	0	0	0	0	0

\* Through December



**Achievement reflects results on the horizontal line.**

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Number of Permit Violations - HH WTP	0	0	0	0	0
Number of Permit Violations - AW WTP	0	0	0	0	1
Number of Permit Violations - WY WTP	1	0	0	0	0
Number of Permit Violations - SS WTP	0	0	0	0	0
Number of Permit Violations - LY WTP	NA	NA	0	0	0

HH WTP = Heidelberg Heights Wastewater Treatment Plant, NPDES Permit No. PA-0036102  
 AW WTP = Arcadia West Wastewater Treatment Plant, NPDES Permit No. PA-0064149  
 WY WTP = Wynnewood Terrace Wastewater Treatment Plant, NPDES Permit No. PA-0036081  
 SS WTP = Sand Spring Wastewater Treatment Plant, NPDES Permit No. PA-0034029  
 LY WTP = Lynn Twp Wastewater Treatment Plant

**Comment: The Wynnewood violation was for an overflow event. Visiting the site on weekends and drawing down solid levels to ensure more tank space corrected the issue.**

**Note: Only includes violation of a NPDES permit numerical limit.**

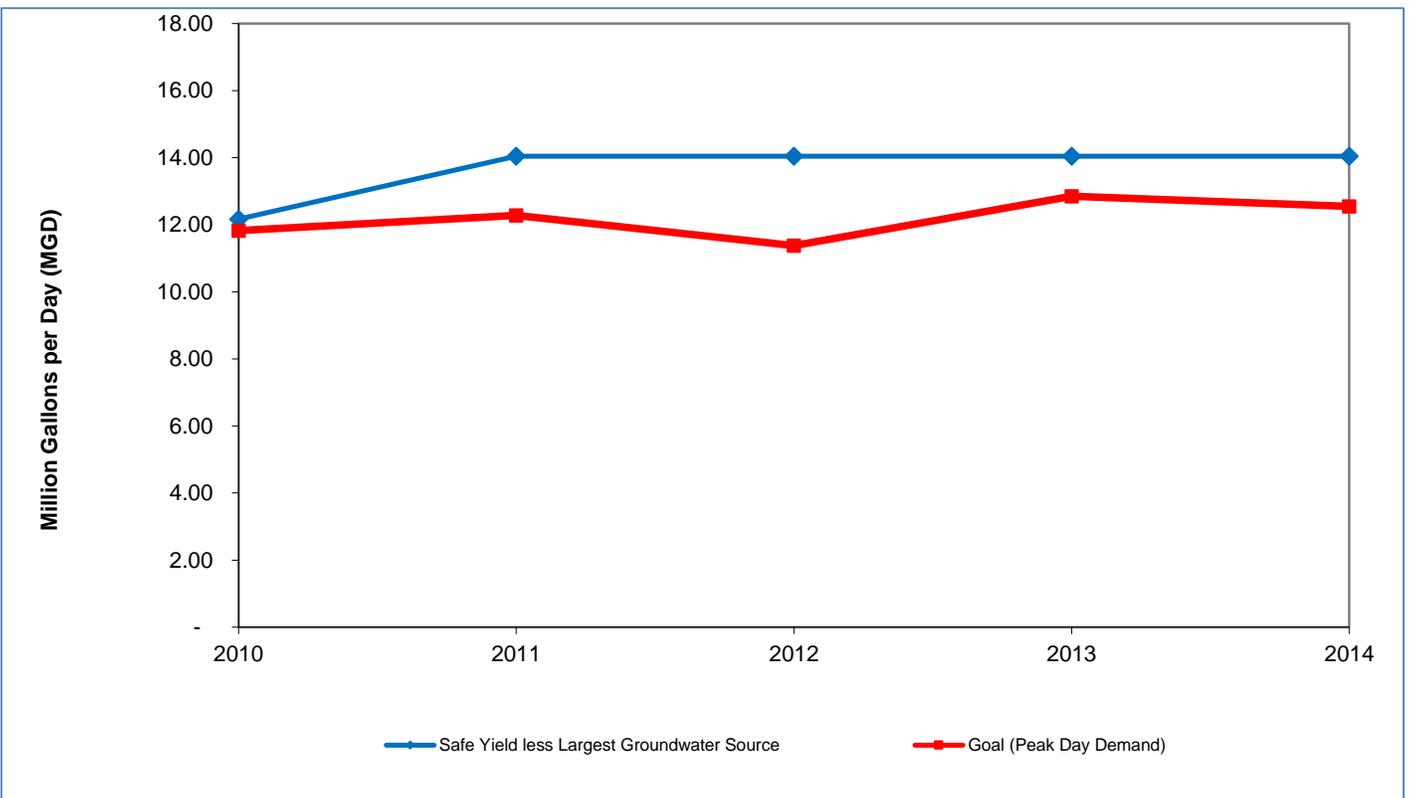
**Issue:** Water Supply Adequacy

**Benchmark Factor:** Safe Yield Water Supply - Suburban Division.

**Measurement Objective:** Determine adequacy of existing water supplies under extreme conditions.

**Goal:** Maintain supply capacity, excluding the largest single groundwater source, greater than or equal to the Peak Day Demand.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Safe Yield less Largest Groundwater Source	12.17	14.04	14.04	14.04	14.04
Goal (Peak Day Demand)	11.83	12.28	11.38	12.85	12.55



**Achievement reflects results above the goal line.**

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total Safe Yield Supply Capacity (MGD)	14.69	16.69	16.69	18.69	18.69
Peak Daily Demand (MGD)	11.83	12.28	11.38	12.85	12.55

**Comment:** The graph above reflects figures for all LCA water systems. With completion of the interconnection with the City of Allentown, we should have adequate supplies to meet peak demands for the foreseeable future in the Central Lehigh Division.

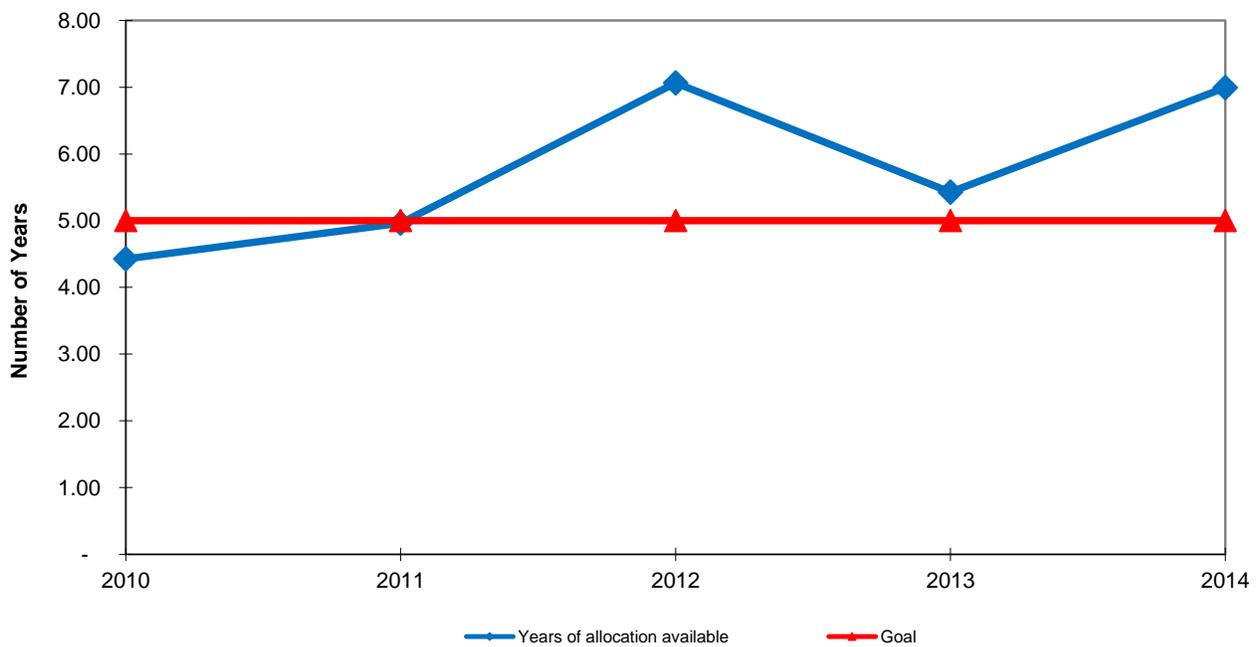
**Issue:** Wastewater Allocation Availability - Suburban Division

**Benchmark Factor:** No. of years of allocation available for LCA to distribute, including unpurchased from the City, based on most recent 5 years of sales.

**Measurement Objective:** Determine adequacy of existing treatment facilities and agreements to meet long-term future demands.

**Goal:** Maintain a minimum of 5 years worth of allocation capacity available.

Year	2010	2011	2012	2013	2014
Years of allocation available	4.43	4.96	7.06	5.43	6.99
Goal	5.00	5.00	5.00	5.00	5.00



**Achievement reflects results above the horizontal lines.**

	2010	2011	2012	2013	2014
Year-end allocation in pool (gpd)	509,938	893,572	789,003	621,992	678,424
Recaptured Allocation estimate (gpd) (A)	694,500	-	-	-	-
Est. Alloc. at City for possible purchase (gpd) (B)	-	-	-	-	-
Total Alloc. possible to distribute (gpd)	1,204,438	893,572	789,003	621,992	678,424
Avg. Sales of Allocation in past 5 years (gpd/yr)	272,109	180,065	111,693	114,559	97,027

**Comment:** The estimate of available allocation can vary widely from year to year depending on precipitation, I/I efforts and the resulting change in wastewater flows. Removing Infiltration and Inflow from the interceptor system is the main focus of current activity to recapture wastewater allocation. Other alternatives such as an upgrade of the LCA WTP to full treatment are being studied to ensure future allocation availability.

(A) Represents the lowest monthly estimate of uncommitted, non-flowing allocation.

(B) Represents allocation amount expected to be remaining at year-end, not including 1 mgd of buffer capacity held by the City.

**Issue:** Maintenance of Assets - Suburban Water System

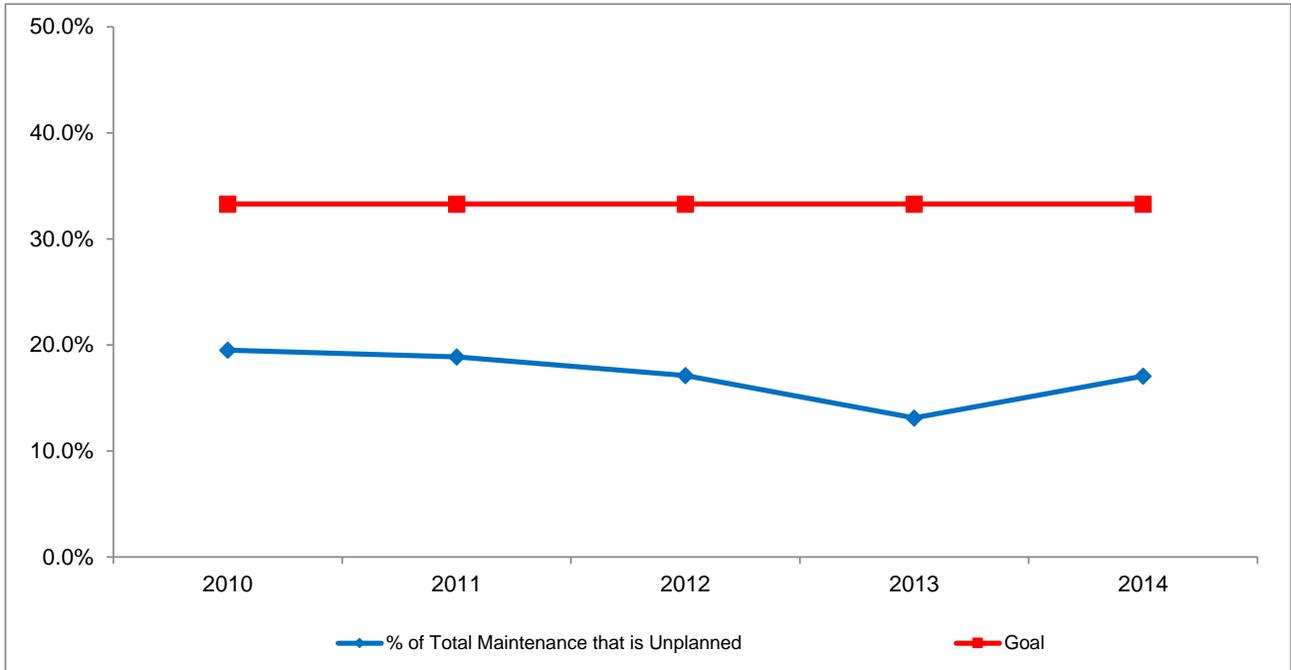
**Benchmark Factor:** Planned vs. Unplanned Maintenance.

**Measurement Objective:** Unplanned Maintenance as a Percent of Total Maintenance Labor.

**Goal:** 33.3% or less of all Maintenance Performed.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
% of Total Maintenance that is Unplanned	19.5%	18.9%	17.1%	13.1%	17.1%
Goal	33.3%	33.3%	33.3%	33.3%	33.3%

\* Through December



**Achievement reflects results below the horizontal line.**

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total Maintenance Labor in Hours	10,404	9,735	9,851	10,930	12,100
Unplanned Maintenance Labor in Hours	2,030	1,838	1,686	1,434	2,066

**Issue:** Maintenance of Assets - Suburban Wastewater System

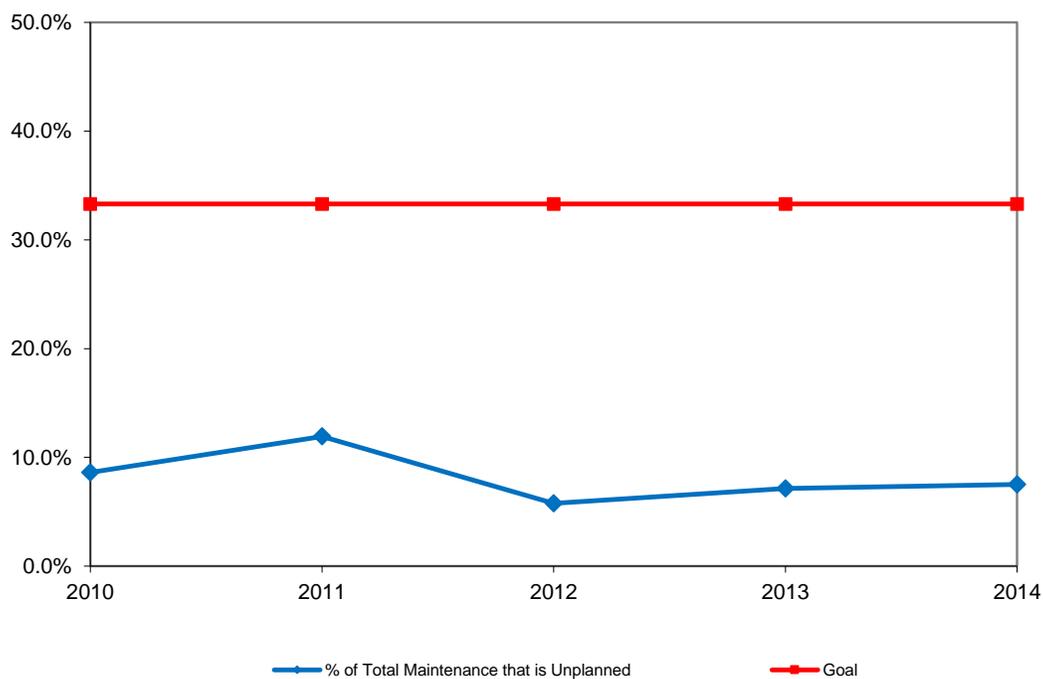
**Benchmark Factor:** Planned vs. Unplanned Maintenance.

**Measurement Objective:** Unplanned Maintenance as a Percent of Total Maintenance Labor.

**Goal:** 33.3% or less of all Maintenance Performed.

Year	2010	2011	2012	2013	2014
% of Total Maintenance that is Unplanned	8.6%	11.9%	5.8%	7.1%	7.5%
Goal	33.3%	33.3%	33.3%	33.3%	33.3%

\* Through December



**Achievement reflects results below the horizontal lines.**

Year	2010	2011	2012	2013	2014
Total Maintenance Labor in Hours	4,206	4,685	3,796	4,078	4,805
Unplanned Maintenance Labor in Hours	362	559	219	291	361

**Issue:** Leakage

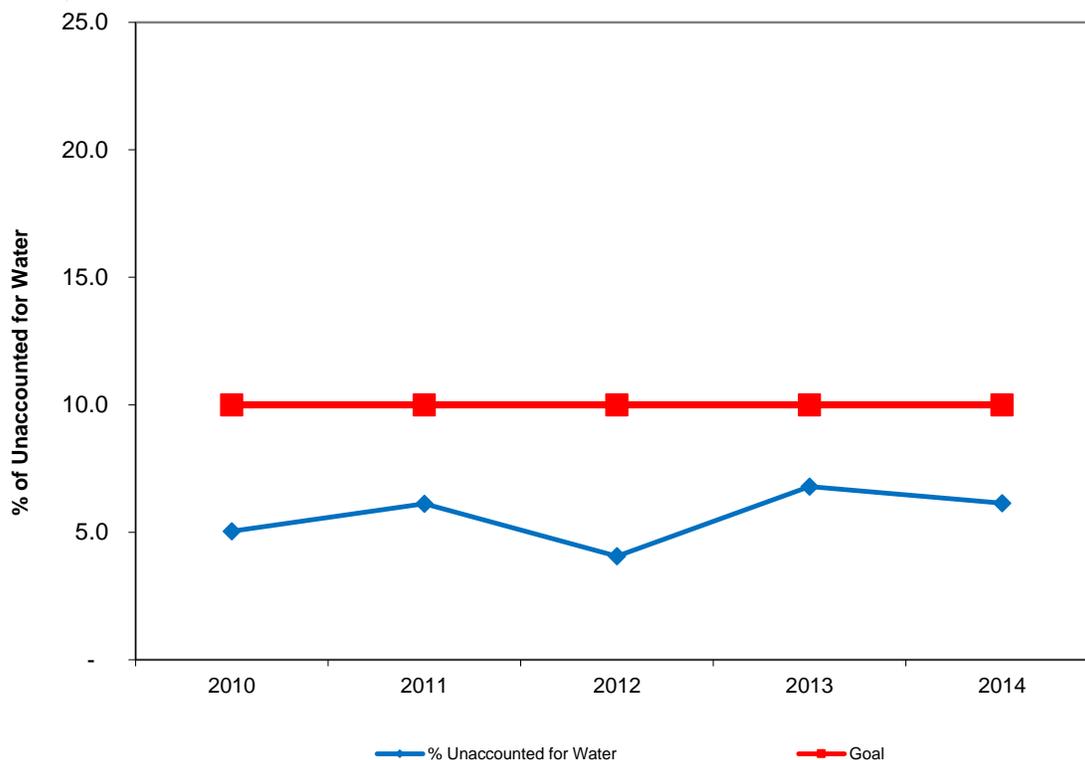
**Benchmark Factor:** Unaccounted for Water - Suburban Division.

**Measurement Objective:** % of Water Produced and/or Purchased not accounted for in Sales or other accounted for uses.

**Goal:** 10.0% or Less.

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
% Unaccounted for Water	5.0	6.1	4.1	6.8	6.1
Goal	10.0	10.0	10.0	10.0	10.0

\* Through December



**Achievement reflects results below the horizontal lines.**

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Water Produced/Purchased (mgd)	7.244	7.237	7.607	8.506	9.271
Unaccounted for Water (mgd)	0.365	0.443	0.309	0.578	0.57

**Comment:** In 2007, the unaccounted for water calculation was changed to follow the DEP definition, which takes metered water produced and purchased less metered sales and other quantifiable use. Unreliable estimates of water loss are no longer considered as accounted for water. As shown the 5 year trend is favorable.

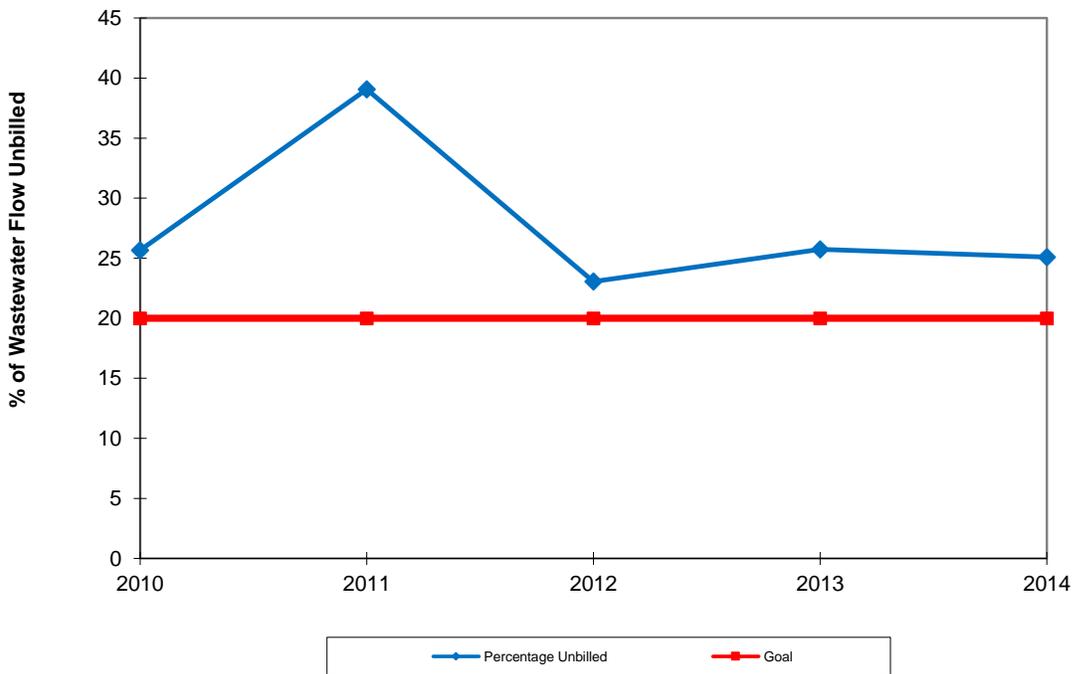
**Issue:** Leakage

**Benchmark Factor:** Unaccounted for Wastewater Flow - Western Lehigh Service Area, Suburban Division.

**Measurement Objective:** Non-billable Wastewater Flow as % of Billable Flow.

**Goal:** 20.0% or less.

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Percentage Unbilled	25.7	39.1	23.1	25.7	25.1
Goal	20.0	20.0	20.0	20.0	20.0



**Achievement reflects results below the horizontal lines.**

Year	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
Total Gallons Discharged	2,594,982	3,185,044	1,997,739	2,989,434	3,255,865
Total Gallons Billed	1,928,740	1,940,838	1,537,131	2,220,105	2,439,110
Total Gallons Unbilled	666,242	1,244,206	460,608	769,329	816,755

Note: Wastewater flow in thousands of gallons.

**Comment:** Recognizing the importance of effectively utilizing the remaining capacity in the Allentown Treatment Plant, we are working with the signatories to identify and eliminate I/I sources. Large storms are the primary reason for the increase in 2011 unbilled flow. Significant I/I reduction efforts are expected to be initiated in 2013.

Note: Billable Flow excludes Emmaus.

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# MEMORANDUM

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**Date:** August 24, 2015

**To:** Authority Board  
**From:** Phil DePoe, Ed Hoyle, Frank Leist  
**Subject:** Suburban Division  
Three Pumping Station Projects:  
CLD Auxiliary, Pine Lakes & Crestwood  
SCADA Capital Project Authorization Amendment & PSA

**MOTIONS / APPROVALS REQUESTED:**

No.	Item	Amount
1	Capital Project Authorization Amendment No. 1 – CLD Pumping Station SCADA	\$73,593
2	Capital Project Authorization Amendment No. 1 – Pine Lakes Pumping Station SCADA	\$53,839
3	Capital Project Authorization Amendment No. 1 – Crestwood Pumping Station SCADA	\$53,013
4	Professional Services Authorization – Aptus Control Systems, Inc. (1)	\$149,045

*(1) The applicable share of the total amount shown included in the Capital Project Authorization Amendments for each project.*

**OVERVIEW OF PROJECTS** *(Reference attached water systems map for locations):*

1. Central Lehigh Division (CLD) New Pumping Station (Lower System to Upper System)  
A Capital Project Authorization (CPA) was approved on May 26, 2015 in the amount of \$193,101 for the Design Phase of a project. The CLD is the largest system in the Suburban Division and provides service to 17,027 customers. The system is located principally in Upper and Lower Macungie townships and small portions of Lowhill, Weisenberg, South Whitehall, Salisbury and Upper Milford townships. The system is divided into two primary service elevations: the Upper System generally north of I-78 and the Lower System generally south of I-78. The water supply source is 18 wells and a permanent interconnection with the Allentown Division.

The project will provide the capability to pump water from the Lower to Upper System; thereby enhancing system reliability and fire flows in the Upper System and, if necessary, providing the flexibility to utilize water purchased from the Allentown Division in the Upper System.

The project will include the installation of a new 1.4 MGD water booster pumping station to pump water from the Lower to the Upper System and approximately 1,600 linear feet of 12-inch diameter interconnecting main. Acquisition of easements and/or other property rights will be required.

2. *Pine Lakes Division (PLD)- Pumping Station Upgrades*

A Capital Project Authorization (CPA) was approved on May 26, 2015 in the amount of \$122,574 for the Design Phase of a project. The PLD is located in Lynn Township and was acquired from a developer on September 25, 1991. The system provides service to 60 customers in the Pine Lakes of Lynn Subdivision. The water supply source is two wells.

This project will include the conversion of the aged existing hydro-pneumatic station serving the development to a variable frequency drive controlled double-pumping system. The project will also include the addition of a new 10,000 gallon steel non-pressure class underground water storage tank and other miscellaneous improvements.

3. *North Whitehall Division (NWD) Crestwood Pumping Station Upgrades*

A Capital Project Authorization (CPA) was approved on May 26, 2015 in the amount of \$105,028 for the Design Phase of a project. The NWD is located primarily in the Schnecksville-Neffs area of North Whitehall Township and serves 908 customers. In general, the NWD is composed of numerous water systems that were acquired over the years from developers and interconnected by various LCA projects. The system is divided into two service elevations: the Primary Service Elevation which serves the majority of customers and the Crestwood Service Elevation which provides service to 96 customers in the Crestwood Subdivision (which is the highest elevation in the NWD). The water supply source for the Primary Service Elevation are 5 active wells and a permanent interconnection with the Northampton Borough Municipal Authority (NBMA). The water supply source for the Crestwood Service Elevation is two wells.

The existing two wells in Crestwood have low yields and at times are inadequate during extremely high demand periods (typically attributed to summer lawn watering). In addition, the source water has manganese, which causes operational problems and customer complaints.

The project consists of the abandonment of the two existing wells and the construction of approximately 600 linear feet of 6-inch diameter water main connecting the Primary NWD system to the Crestwood Pumping Station; thereby providing a higher quality water source and assuring adequate capacity to meet extremely high demand periods. Applicable piping and controls and other modifications to the pumping station are also included.

The memo for the Design Phase authorization for this project stated that a Professional Services Authorization for SCADA (supervisory control and data acquisition) services would be presented to the Board at a later date. As such we developed a scope of services to design, furnish and implement a SCADA system that will control and monitor operation of the stations, including an upgrade of hardware and software components at the LCA central office.

**FINANCIAL:**

The project will be funded by LCA Suburban Division.

**PROJECT STATUS:**

Pending Board approval of the SCADA Phase services at the three pump stations.

**THIS APPROVAL - SCADA PHASE**

Lehigh County Authority (LCA) intends to retain the services of Aptus Control Systems, Inc. to provide the following services:

<b>Professional Services</b>
1. Attend design and progress meetings
2. Provide control panel design drawings
3. Provide new SCADA control panel (CLD Aux. PS only)
4. Provide additional hardware in existing control panels
5. HMI & Master PLC programming
6. Provide commissioning services and electrical installation support

**SCADA PROFESSIONAL SERVICE SELECTION PROCESS:**

On May 14, 2015 Aptus Control Services, Inc. provided three separate Technical and Cost Proposals for SCADA services for the three applicable pump stations. Based upon our review of all aspects of both the Technical and Cost Proposals submitted by Aptus, we recommend award of the SCADA Phase services for all three projects to Aptus. Their proposal is on scope and represents what we believe is the best overall value for the Authority. Aptus will perform the services outlined in their proposal dated May 14, 2015. Aptus Control Services, Inc. has provided the Authority with satisfactory SCADA services on prior projects and their involvement in the current projects ensures on-going SCADA continuity.

**PROJECT SCHEDULE:**

Assuming no regulatory permit delays, the Crestwood and Pine Lakes pump station projects are anticipated to be bid ready by the end of November 2015. The CLD Auxiliary pump station project is anticipated to be bid ready by the end of February 2016.

**FUTURE AUTHORIZATIONS:**

Authorization for construction phase services is not requested at this time. A CPA Amendment for the Construction Phase of each project will be presented to the Board at a later date, which will include the general and electrical construction contracts, as well as for construction engineering services, staff costs, and a construction manager.

# CAPITAL PROJECT AUTHORIZATION

## Amendment No. 1

<b>PROJECT NO.:</b>	SD-W-15-2	<b>BUDGET FUND:</b>	Suburban Div\Water\Capital
<b>PROJECT TITLE:</b>	Suburban Division Pumping Station Project: CLD Auxiliary - SCADA	<b>PROJECT TYPE:</b>	<input checked="" type="checkbox"/> Construction <input type="checkbox"/> Engineering Study <input type="checkbox"/> Equipment Purchase <input checked="" type="checkbox"/> Amendment
<b>THIS AUTHORIZATION:</b>	\$73,593		
<b>TO DATE:</b>	\$273,034		

**DESCRIPTION AND BENEFITS:**

This amendment requests authorization for SCADA services that Aptus Control Services, Inc. will perform and related administrative support to provide various control features and for remote monitoring of the station.

The Central Lehigh Division Auxiliary Pump Station Project will feature the installation of a new booster station and main extension to pump water from the Lower to the Upper System.

Please reference the cover Memo for additional information.

**Authorization Status:**

<i>Previous Authorizations</i>	
<i>Planning &amp; Design Phase (exclusive of SCADA)</i>	\$199,441
<b>REQUESTED THIS AUTHORIZATION</b>	
<b>SCADA</b>	
<b>Staff</b>	\$5,000
<b>Engineering Consultants</b>	\$61,893
<b>Contingencies</b>	\$6,700
<b>Total This Authorization</b>	\$73,593
 <i>Future Authorization</i>	
Construction Phase	\$940,067
 <b>Total Estimated Project</b>	 \$1,213,101

**REVIEW AND APPROVALS:**

Project Manager	Date	Chief Executive Officer	Date
Chief Capital Works Officer	Date	Chairman	Date

# CAPITAL PROJECT AUTHORIZATION

## Amendment No. 1

<b>PROJECT NO.:</b>	SD-W-15-4	<b>BUDGET FUND:</b>	Suburban Div\Water\Capital
<b>PROJECT TITLE:</b>	Suburban Division Pumping Station Project: Pine Lakes - SCADA	<b>PROJECT TYPE:</b>	<input checked="" type="checkbox"/> Construction <input type="checkbox"/> Engineering Study <input type="checkbox"/> Equipment Purchase <input checked="" type="checkbox"/> Amendment
<b>THIS AUTHORIZATION:</b>	\$53,839		
<b>TO DATE:</b>	\$185,023		

**DESCRIPTION AND BENEFITS:**

This amendment requests authorization for SCADA services that Aptus Control Services, Inc. will perform and related administrative support to provide various control features and for remote monitoring of the station.

The Pine Lakes Project will feature the conversion of the existing hydro-pneumatic station to a variable frequency drive controlled double pumping system (along with other miscellaneous improvements).

Please reference the cover Memo for additional information.

**Authorization Status:**

<i>Previous Authorizations</i>	
<i>Planning &amp; Design Phase (exclusive of SCADA)</i>	\$131,184
<b>REQUESTED THIS AUTHORIZATION</b>	
<b>SCADA</b>	
<b>Staff</b>	\$5,000
<b>Engineering Consultants</b>	\$43,939
<b>Contingencies</b>	\$4,900
<b>Total This Authorization</b>	<b>\$53,839</b>
<i>Future Authorization</i>	
Construction Phase	\$264,551
Total Estimated Project	\$449,574

**REVIEW AND APPROVALS:**

Project Manager	Date	Chief Executive Officer	Date
Chief Capital Works Officer	Date	Chairman	Date

# CAPITAL PROJECT AUTHORIZATION

## Amendment No. 1

<b>PROJECT NO.:</b>	SD-W-15-3	<b>BUDGET FUND:</b>	Suburban Div\Water\Capital
<b>PROJECT TITLE:</b>	Suburban Division Pumping Station Project: Crestwood - SCADA	<b>PROJECT TYPE:</b>	<input checked="" type="checkbox"/> Construction <input type="checkbox"/> Engineering Study <input type="checkbox"/> Equipment Purchase <input checked="" type="checkbox"/> Amendment
<b>THIS AUTHORIZATION:</b>	\$53,013		
<b>TO DATE:</b>	\$165,081		

**DESCRIPTION AND BENEFITS:**

This amendment requests authorization for SCADA services that Aptus Control Services, Inc. will perform and related administrative support to provide various control features and for remote monitoring of the station.

The Crestwood Project consists of abandonment of existing wells and storage tank currently serving higher elevation customers and a connection of the pumping station to the existing North Whitehall Division System.

Please reference the cover Memo for additional information.

**Authorization Status:**

<i>Previous Authorizations</i>	
<i>Planning &amp; Design Phase (exclusive of SCADA)</i>	\$112,068
<b>REQUESTED THIS AUTHORIZATION</b>	
<b>SCADA</b>	
<b>Staff</b>	\$5,000
<b>Engineering Consultants</b>	\$43,213
<b>Contingencies</b>	\$4,800
<b>Total This Authorization</b>	\$53,013
 <i>Future Authorization</i>	
Construction Phase	\$184,947
 Total Estimated Project	 \$350,028

**REVIEW AND APPROVALS:**

Project Manager	Date	Chief Executive Officer	Date
Chief Capital Works Officer	Date	Chairman	Date



**Lehigh County Authority**

1053 Spruce Street \* P.O. Box 3348 \* Allentown, PA 18106-0348  
(610)398-2503 \* FAX (610)398-8413 \* Email: service@lehighcountyauthority.org

**PROFESSIONAL SERVICES AUTHORIZATION**

**Professional:** Aptus Control Systems, Inc.  
332 East Oak Street  
Palmyra, PA 17078

**Date:** August 24, 2015  
**Requested By:** Phil DePoe, Ed Hoyle

**Approvals**  
**Department Head:** \_\_\_\_\_  
**Chief Executive Officer:** \_\_\_\_\_

**Description of Services (Work Scope, Steps, Check Points, etc.):**  
**Suburban Division – Three Pumping Station Projects (SCADA Services)**

Aptus Control Systems, Inc. will perform the SCADA related services for the Central Lehigh Division Auxiliary Pumping Station, the Pine Lakes Pumping Station, and the Crestwood Pumping Station, all in accordance with their proposals dated May 14, 2015.

<b>Professional Services</b>
1. Attend design and progress meetings
2. Provide control panel design and wiring drawings
3. Provide new SCADA control panel (CLD Aux. PS only)
4. Provide additional hardware in existing control panels
5. HMI & Master PLC programming
6. Provide commissioning services and electrical installation support

Please reference the cover Memo for additional information.

**Cost Estimate (not to be exceeded without further authorization):** \$149,045

<b>Project</b>	<b>Proposal Amount</b>
CLD Auxiliary Pumping Station	\$61,893.00
Pine Lakes Pumping Station	\$43,939.00
Crestwood Pumping Station	\$43,213.00

**Time Table and Completion Deadline:** Aptus Control Systems, Inc. agrees to conduct its work in a manner that will not cause delays in the schedules of the other project participants, including the design firm and contractors to be hired by the Authority, whose schedules shall be provided to Aptus Control Systems, Inc. upon request.

**(For Authority Use Only)**

**Authorization Completion:**

**Approval:** \_\_\_\_\_ **Actual Cost:** \_\_\_\_\_ **Date:** \_\_\_\_\_



**Lehigh County Authority**

1053 Spruce Street \* P.O. Box 3348 \* Allentown, PA 18106-0348  
(610)398-2503 \* FAX (610)398-8413 \* Email: [service@lehighcountyauthority.org](mailto:service@lehighcountyauthority.org)

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**MEMORANDUM**

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**Date:** August 24, 2015

**To:** Authority Board  
**From:** Charles Volk, P.E. Asset Management Engineer  
**Subject:** Roof Replacement Project, Wastewater Pre-Treatment Plant Construction Phase

**MOTIONS /APPROVALS REQUESTED:**

No.	Item	Amount
1	<u>Capital Project Authorization</u> –Construction Phase (covered under previously authorized Capital Budget for WWTP)	\$900,000
2	<u>Contract Award:</u>	\$393,000
**	<ul style="list-style-type: none"> <li>• General Construction -Pro Com Roofing Corp.</li> </ul>	

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

**PROJECT OVERVIEW:**

D’Huy Engineering completed a study in 2014 entitled “Wastewater Treatment Plant Roof Conditions Assessment Report”, which included an evaluation of all building roofs on the site. The roofs on the Administration Building and Digester Building were both identified as displaying poor condition and in urgent need to replacement (roof on Admin building has been leaking with each significant rainfall). LCA retained D’Huy to provide design, bid, and construction phase services to replace the roofs on the Administration and Digester Buildings with 30-year rated modified built-up roof system with flood coat and gravel surfacing. Bids were opened on 8/20/15.

**FINANCIAL:**

The Project will be funded by the LCA Suburban Division – Operations Department.

**PROJECT STATUS & BID RESULTS**

Bid phase was administered in-house via PennBid electronic bidding service. The project was advertised for re-bid on August 3, 2015. A mandatory pre-bid meeting was held on August 12, 2015 at the WTP where representatives from eight (8) contractors attended the meeting.

Seven (7) bids were received. The low bid was submitted by Pro Com Roofing Corp. (Warrington PA) for total bid amount of \$393,000. The bid amount is less than the engineer's estimate for the project (\$440,000).

LCA and D'Huy Engineering have reviewed the bid documents and the documents are complete and in order. D'Huy Engineering has prior experience with this contractor and their work performance has been satisfactory; the contractor also recently was awarded roof replacement work at KIWWTP.

The recommendation of this memorandum is to award the construction contract to Pro Com Roofing Corp. for the total bid amount of \$393,000.

**THIS APPROVAL:** Construction contract.

**CONSTRUCTION CONTRACTS**

Seven (7) bids were received on August 20, 2015 via Penn Bid. The bidding results are as shown in Table 1 below. The total bid amounts includes allowance items:

<b>Table 1 – Bid Results</b>	
<b>General Construction</b>	
<b>Bidder</b>	<b>Amount</b>
<i>Pro Com Roofing Corp.</i>	<i>\$393,000</i>
<i>Jottan Inc.</i>	<i>\$429,153</i>
<i>C&amp;D Waterproofing Corp.</i>	<i>\$458,605</i>
<i>David Randall Assoc. Inc.</i>	<i>\$481,500</i>
<i>Munn Roofing Corp.</i>	<i>\$504,000</i>
<i>Garvey Roark, LLC</i>	<i>\$549,623</i>
<i>D.A. Nolt, Inc.</i>	<i>\$656,780</i>

**MATERIAL PROCUREMENT:** N/A

**PROFESSIONAL SERVICES :** N/A

**SCHEDULE**

Construction phase is anticipated to be substantially complete within 60 calendar days from Notice to Proceed.

**FUTURE AUTHORIZATIONS**

None anticipated.

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## MEMORANDUM

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**Date:** August 25, 2015

**To:** Authority Board  
**From:** Bob Kerchusky  
**Subject:** Kline's Island Wastewater Treatment Plant  
Biosolids Disposal Agreement

**MOTIONS / APPROVALS REQUESTED:**

No.	Item	Amount
1	Agreement Authorization – Biosolids Disposal Contract with Synagro Central LLC	\$17.50/ wet ton*

*\*The average annual tonnage of biosolids produced at the KIWWTP is about 14,000 wet tons/year; therefore the annual value of the contract is approximately \$245,000.*

**BIOSOLIDS BACKGROUND:**

The Kline's Island Wastewater Treatment Plant (KIWWTP) was constructed in 1929 and significantly upgraded in 1968, 1978, and 1998. The treatment processes constructed with each successive upgrade of the facility included additional settling tanks for the sole purpose of separation of solids from the liquid phase of the wastewater.

The solids removed by the settling of wastewater, whether they be from a physical or biological process, are typically infectious, highly putrescible and therefore must be stabilized before they can safely recycled as biosolids on farm fields or disposed of in a sanitary landfill. At the KIWWTP the solids captured by the 17 settling tanks constructed on the 33 acre plant site are stabilized in three anaerobic digesters. The anaerobic digestion process reduces the concentration of pathogenic microorganisms in the wastes as well as decreases the volume of the solids requiring disposal by converting a portion of the solids to methane, carbon dioxide and water. Upon completion of the digestion process the wastewater solids are referred to as "Biosolids"; on average the KIWWTP produces approximately 14,500 wet tons of biosolids per year.

Once stabilized, the biosolids can be beneficially reused as a soil amenity on farmland or at land reclamation sites. The biosolids produced by KIWWTP typically provide 125 pounds of nitrogen and 48 pounds of phosphorous per dry ton of solids applied reducing the amount fertilizer required to grow crops and increasing the amount of organic material in the soil. The Class "B" biosolids from KIWWTP have been successfully land applied to regional farmland and reclamation sites for several decades. Currently under the lease agreement with the City, LCA controls and operates the equipment utilized to haul the dewatered biosolids cake to the beneficial reuse sites (farm fields). Generally speaking, implementation of the land application process subsequent to delivery of the biosolids to the disposal sites by City/LCA staff has been completed by a contractor for more than 30 years.

**SCOPE:**

The purpose of the contract is to provide for the beneficial use or land application of the Authorities Kline's Island Wastewater Treatment Plant residuals (Class B Biosolids) under

PADEP General Permit # PAG08-2203 by an experienced and qualified contractor. The term of this contract shall be three calendar years commencing on March 01, 2016. The Authority shall have the option to renew this agreement for two (2) additional and separate one-year terms (January 1st through December 31st) under the same conditions of the original contract , with opportunity for negotiating any pricing schedule beginning at least (90) days prior to renewal. The successful bidder shall provide the following:

- Provide all labor, benefits, equipment, materials, fuel, utilities, insurance, performance bonds, maintenance costs, administrative and management services, and other related services required with implementation of the land application of biosolids.
- Provide loaders, biosolids application equipment, and/or biosolids incorporation equipment at each application site of such capacity and condition to allow land application activities within a reasonable time period to meet the farmers' needs and requirements. All trucks and equipment shall be properly labeled, licensed, tagged, and permitted.
- Provide an onsite Technical Service Manager during normal business hours for the duration of the contract to provide adequate documented training, technical oversight, and managerial oversight of the Contractor's employees, subcontractors, and agents associated with the land application of biosolids. The Contractor will coordinate land application of biosolids activities with the Pennsylvania Department of Environmental Protection.
- Identify and permit farms (30 day notice) for use as biosolids land application sites; acquire, permit, and maintain suitable off-site biosolids storage areas to store biosolids. Develop and implement an Off-Site Biosolids Storage Plan that outlines the proposed strategy for staging and storing biosolids off-site prior to beneficial use during periods when the soil is frozen and biosolids cannot be land applied.
- Obtain written permission from each farm owner for use of farm as a land application site and provide the farmer with adequate documented proper information about the biosolids land application program.
- Maintain copies of project and employee records and documents related to the biosolids land application site. Develop and implement monitoring, record keeping, and reporting programs as required by applicable legal requirements. The Contractor will be responsible for entering the required and necessary data into a database.
- Prepare site maps for identified farms to be used for biosolids land application sites. To-scale maps showing field boundaries, setbacks, residences, wells, streams, ponds, other surface waters, field total acreage, and field biosolids-approved acreage shall be included with the site maps.
- Perform application site soil sampling, testing, laboratory analyses, and reporting that meets all applicable federal, state, and/or local regulations and are regularly accepted methods for these tasks. Calculate the biosolids agronomic loading rate prior to land application for each farm field and based on the crop(s) to be grown and the biosolids data provided by the Authority. The Contractor is responsible for ensuring the appropriate agronomic rates are applied on each field.
- Conduct operations of the biosolids land application projects in compliance with all applicable federal, state, and local laws, regulations, permits, and approvals. Develop and submit reports and certifications as required by all applicable federal, state, and/or local regulations for biosolids land application sites.
- Develop and implement an Odor Mitigation and Control Plan that outlines the policies and procedures in place to minimize nuisance odors during storage and land application and made available to the Authority upon request.

- Retain at a minimum the following records indefinitely: site locations; acres applied; date and time of application; cumulative amount of biosolids pollutants applied; dry tons of biosolids to each site; description of how cumulative loadings were met; and certification statement.

**BID SUMMARY:**

Biosolids Disposal Bid No.2015-15 was advertised for bid on July 22, 2015 through Pennbid. One addendum to the specifications was issued on July 28, 2015. The bid was opened on August 04, 2015. The Bid results are as summarized below:

<b><u>Bidder</u></b>	<b><u>Amount</u></b>
Synagro Central LLC	\$17.50/ wet ton

**RECOMMENDATION**

Although there was only one bidder, the offered price is in line with the City's and LCA's annual average unit cost for disposal of KIWWTP biosolids over the past 15 years. Under the existing contract the tipping fee structure is based on seasonal rates with the unit price for winter storage period being slightly higher as a result of the contractor's logistical costs of storing the biosolids. The new contract provides for the unit cost to be fixed throughout the entire year with no adjustment for winter storage. To date in 2015 approximately 9,277 tons biosolids have been land applied at an average unit cost of \$17.39/wet ton.

Therefore, the recommendation is to award the contract to Synagro Central LLC at a unit disposal cost of \$17.50/ wet ton of biosolids; with a term of three calendar years commencing on March 01, 2016 and the option to renew the agreement for two additional one-year terms.



## LEHIGH COUNTY AUTHORITY

# AGREEMENT

This Agreement made this \_\_\_\_\_ day of \_\_\_\_\_ 2015 by and between

LEHIGH COUNTY AUTHORITY, with an office at P.O. Box 3348, 1053 Spruce Street, Allentown, PA 18106-0348 (the "Authority"),

and

SYNAGRO CENTRAL, LLC, with an office at 435 Williams Court, Suite 100, Baltimore, MD 21220 (the "Contractor").

WHEREAS, the Authority desires to procure the services of a professional consultant and contractor who will coordinate the beneficial reuse of the Authority's Class B Biosolids from the Kline's Island Wastewater Treatment Plant in the City of Allentown.; and

WHEREAS, the Authority issued its *Lehigh County Authority Detailed Specifications for Biosolids Disposal*, Bid No. 2015 and *Addendum No. 1* dated 28 July 2015 (the "Detailed Specifications") with a request for bids, and Contractor submitted the successful bid; and

WHEREAS, Contractor is ready, willing and able to perform such services.

NOW, THEREFORE, the parties hereto in consideration of the promises and mutual covenants herein contained, and intending to be legally bound, agree as follows:

1. **SCOPE OF WORK.** The Work shall be as described in the *Detailed Specifications*.
2. **CONTRACT.** The Contractor agrees to perform all obligations imposed by this Contract entitled "*Biosolids Disposal*, Bid No. 2015" (collectively referred to herein as the "Work") in strict accordance with the Contract Documents. The Contract Documents, which are made a part thereof, are as follows, with conditions in one of the other documents being included as though stated in this Agreement.
  - A. *Detailed Specifications*, which includes *Notice to Bidders* and *Instructions to Bidders*
  - B. *Agreement*
  - C. *Notice to Proceed*
  - D. *Addendum No. 1*
  - E. *Bidder Questions/Authority Answers* (PennBID Excel document)

## F. Contractor's Bid

In the event of conflicts of requirements or interpretation, the following order of precedence shall apply: Agreement, Bidder Questions/ Authority Answers (PennBID Excel document), Addendum No. 1, Detailed Specifications (which includes Instructions to Bidders and Notice to Bidders), Contractor's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award when attached as an exhibit to the Agreement), the Bonds.

The parties acknowledge that the reference in Addendum No. 1 to §2.2.1 was incorrect and the reference should instead be to §2.3.1 and the reference in §2.11 of the Detailed Specifications to a document titled "Payment Terms Agreement" is incorrect as there is no "Payment Terms Agreement" document with this contract; payment shall be made in accordance with this Agreement. Also in response to the Bidders' questions and Authority's answers via the PennBID Excel document, a phrase shall be added to the end of §1.2 of the Detailed Specifications that reads as follows:

"In the event that, after the date hereof, (i) a change in Federal, State, or local law or ordinance; (ii) orders or judgments of any Federal, State or local court, administrative agency or governmental body; or (iii) a change in permit conditions or requirements increases Contractor's cost of performance hereunder, Contractor shall be entitled to compensation for such documented increased costs as a result of (i), (ii) or (iii) above., but no profit thereon."

Also a new "§1.14 - Force Majeure" shall be added to the Detailed Specifications that reads as follows:

"Neither party shall be liable to the other for reasonable delay in the performance of its obligations caused by any act or occurrence beyond its reasonable control, including, but not limited to: fires; floods; strikes (except strikes involving a party's personnel); accidents; extreme weather conditions (hurricanes, tornadoes, unusual extreme or extended periods of precipitation, temperature or wind, or other adverse weather conditions); acts of war, aggression or terrorism; equipment failure (other than due to the inadequate maintenance thereof); and acts of God. Neither (i) reasonably anticipated weather conditions normal for the region nor (ii) failure to meet specified payment terms are considered beyond a party's reasonable control. If a provision of this section is applicable, the party relying thereon shall give prompt notice to the other party of the circumstances, the basis for applicability of this section and the time required to cure such breach or delay. The parties shall promptly provide notice of the need, if any, for any change in compensation or for renegotiation of terms in order to mitigate the effects of such event. Contractor shall be entitled to additional time and compensation if such event delays performance into a season different from that assumed when this Agreement was executed, unless the contract is terminated as set forth below. Contractor and the Authority shall use reasonable best efforts to agree on appropriate mitigating actions under the

circumstances. If Contractor shall have more than a reasonable delay, the Authority shall, at its sole option, have the right to terminate the agreement with no additional liability to Contractor than payment for service already provided before the work stopped. "Reasonable" as used in this section is intended to be based on a prompt response based on the circumstances of the particular force majeure event planned to minimize the delay of work".

3. **CONSIDERATION:** Contractor shall be paid a total sum of \$17.50 per wet ton of biosolids delivered by the Authority to the location. Each truck load of biosolids to be delivered shall be weighed at the City of Allentown weigh station and a weight ticket obtained at that time. A copy of the weight ticket shall be given to the Contractor representative for the location site and a copy of the weight ticket shall be attached to the Contractor load record. The Authority shall pay Contractor the amount stated in invoices issued for actual loads delivered as evidenced by the weight tickets during the period covered by the invoice. Invoices are due and payable within thirty (30) calendar days after receipt by the Authority except to the extent a matter is disputed in writing by the Authority.
4. **TERM:** The term of this contract shall be as set forth in the Detailed Specifications and begin on 1 March 2016.
5. **INDEPENDENT CONTRACTOR:** At all times the Contractor shall be considered an independent contractor and is not an agent or employee of the Authority.
6. **WORKMAN'S COMPENSATION:** The Contractor hereby accepts the provisions of the Workmen's Compensation Act of the Commonwealth of Pennsylvania and any supplements or amendments, or will file with Lehigh County Authority a certificate of exemption from such insurance from the Bureau of Workmen's Compensation of the Department of Labor and Industry of the Commonwealth of Pennsylvania.
7. **INSURANCE:** The Contractor shall submit certificates of insurance to the Authority in compliance with the insurance requirements in the Detailed Specifications unless Contractor already has an appropriate one on file with the Authority.
8. **PERFORMANCE BOND:** The Contractor shall furnish a Performance Bond in the form provided as Exhibit A of this Agreement.
9. **PRIVATE INTEREST:** The Contractor certifies that no officer or employee of the Authority or the City of Allentown, who exercises any function or responsibilities in connection with the recommendation of the award of this contract, has any private interest, direct or indirect, in this contract. The Contractor also agrees that it will not hire or otherwise employ any Authority or City of Allentown officials, representatives or personnel who exercise any discretion in the awarding, administration or continuance of this Agreement. This prohibition shall also apply to any person who has been an official of, representative of or employed by the Authority or the City of Allentown within one year of this Agreement. A failure to abide by the provision of this paragraph shall

constitute an incurable, material breach of this Agreement and shall be grounds to terminate this Agreement.

- 10. **INDEMNIFICATION:** The Contractor shall indemnification in compliance with the indemnification and hold harmless provisions in the Detailed Specifications.
- 11. **INDEMNIFICATION SURVIVAL LIMITATION:** The obligations of indemnification set for in §10 shall survive for a period of time that is coincident with the duration of a viable cause of action which may be asserted against the Authority hereunder.
- 12. **ASSIGNMENT:** The Contractor shall not assign or subcontract this Agreement or any of its rights or obligations without written consent from the Authority.
- 13. **INTEGRATION:** This Agreement represents the entire understanding of the parties and supersedes all prior discussions, understanding, and agreements between the parties with respect to all the matters contemplated herein.
- 14. **AMENDMENT:** This Agreement shall not be modified or amended except in writing executed by both parties.
- 15. **SEVERABILITY:** The provisions of this Agreement are separate and severable from one another. If any provision is determined to be invalid, the remaining, the remaining provisions shall remain valid and continue in effect.
- 16. **CHOICE OF LAW AND VENUE:** This Agreement is made under, governed by, and will be construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania without regard to any conflict of laws provisions. Venue for any disputes shall be in the Court of Common Pleas of Lehigh County, Pennsylvania.
- 17. **TERMINATION:** Termination of this Agreement shall be in accordance with the termination provisions of the Detailed Specifications.
- 18. **BINDING EFFECT:** This Agreement shall be binding on the parties hereto, their heirs, personal representatives, successors and assigns.

**IN WITNESS WHEREOF, the** parties hereto have executed and sealed this agreement the day and year first above written.

**SYNAGRO CENTRAL, LLC:**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**LEHIGH COUNTY AUTHORITY:**

By: \_\_\_\_\_

Name: Aurel M. Arndt

Title: Chief Executive Officer

Exhibit A - The Performance Bond Form

**PERFORMANCE BOND**

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):  
of Business):

SURETY (Name and Address of Principal Place

OWNER (Name and Address): Lehigh County Authority  
1053 Spruce Street, P.O. Box 3348  
Allentown, PA 18106

**CONTRACT**

Date:  
Amount:  
Description (Name and Location):  
Project Identification:  
Contract Number Identification:

**BOND**

Bond Number:  
Date :  
Amount:  
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed below and the terms of the Contract Documents, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

Signature: \_\_\_\_\_ (Seal)

Name and Title:

\_\_\_\_\_  
(Seal)

Surety's Name and Corporate Seal

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: \_\_\_\_\_

Signature and Title

CONTRACTOR AS PRINCIPAL

SURETY

Company:

Signature: \_\_\_\_\_ (Seal)  
Name and Title:

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title:

THE PARTIES ACKNOWLEDGE THAT THE REASON FOR, AND INTENT OF, THIS PERFORMANCE BOND IS TO PLACE THE WORK AND THE OWNER IN THE SAME POSITION IT SHOULD HAVE BEEN BEFORE CONTRACTOR ACTIONS, OR LACK OF ACTION, WHICH RESULTED IN DECLARATION OF A DEFAULT, THUS THE FOLLOWING PRINCIPLES SHALL GUIDE ALL INTERPRETATION OF THE PERFORMANCE BOND:

- A - The Work is to be completed without any additional costs to Authority;
  - i) since the default is not within the control of Authority, Authority should be compensated for all of its costs caused by the default.

and

- B - The Work is to be completed with minimal amount of lost time.
  - i) since time is of the essence in this contract, Authority shouldn't be penalized by further lost time because of Surety's processing and internal procedures, including the negotiation of a takeover, if appropriate.
  - ii) use of the terms "promptly", "reasonable time", "with reasonable promptness", "as soon as practicable", etc. shall be interpreted as meaning "not to exceed 15 calendar days", other than in Paragraph 3.1.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Authority for the performance of the Contract, which is incorporated herein by reference.
2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Authority Default, Surety's obligation under this Bond shall arise after:
  - 3.1. Authority has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Authority is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 calendar days after receipt of such notice to discuss methods of performing the Contract. If Authority, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Authority's right, if any, subsequently to declare a Contractor Default; and
  - 3.2. Authority has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 calendar days after Contractor and Surety have received notice as provided in Paragraph 3.1; and
  - 3.3. Authority has agreed to pay the Balance of the Contract Price as the remaining Work is completed to:
    - a. Surety in accordance with the terms of the Contract;
    - b. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

4. When Authority has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions set forth in Paragraphs 4.1 through 4.4. If Authority determines that it is necessary to secure or protect existing Work following a declaration of Contractor Default, or to continue performance of the Contract Work on an emergency basis while the Surety decides how to proceed pursuant to Paragraph 4, Authority may, with its own forces or by contract, perform such tasks as it deems necessary to secure or protect the Work or to maintain critical progress of the Work. The reasonable costs incurred by Authority in such an effort shall be charged against the Balance of the Contract Price and covered by this Bond.

4.1. Arrange for Contractor, with consent of Authority, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Authority for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Authority and Contractor selected with Authority's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Authority the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Authority resulting from Contractor Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

a. After investigation, determine the amount for which it may be liable to Authority and, as soon as practicable after the amount is determined, tender payment therefor to Authority; or

b. Deny liability in whole or in part and notify Authority citing reasons therefor.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 calendar days after receipt of an additional written notice from Authority to Surety demanding that Surety perform its obligations under this Bond, and Authority shall be entitled to enforce any remedy available to Authority. If Surety proceeds as provided in Paragraph 4.4, and Authority refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Authority shall be entitled to enforce any remedy available to Authority.

6. After Authority has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Authority shall not be greater than those of Contractor under the Contract, and the responsibilities of Authority to Surety shall not be greater than those of Authority under the Contract.

7. Surety shall not be liable to Authority or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Authority or its heirs, executors, administrators, or successors.

8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Authority, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein.

12. Definitions.

- 12.1 Balance of the Contract Price: The total amount payable by Authority to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Authority in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
- 12.2. Contract: The agreement between Authority and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
- 12.4. Authority Default: Failure of Authority, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.