



## BOARD MEETING AGENDA – January 22, 2018

1. Call to Order

- NOTICE OF MEETING RECORDINGS

Meetings of Lehigh County Authority's Board of Directors that are held at LCA's Main Office at 1053 Spruce Road, Wescosville, PA, may be recorded for viewing online at [lehighcountauthority.org](http://lehighcountauthority.org). Recordings of LCA meetings are for public convenience and internal use only and are not considered as minutes for the meeting being recorded, nor are they part of public record. Recordings may be retained or destroyed at LCA's discretion.

- *Public Participation Sign-In Request*

2. Review of Agenda / Executive Sessions

3. Approval of Minutes

- *December 11, 2017 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

**FINANCE AND ADMINISTRATION**

- *Extension of Authority Term (Resolution No. 1-2018-1) – (yellow)*
- *LCA 2020 Action Plans – Part 1 – (grey)*

**WATER**

**WASTEWATER**

6. Monthly Project Updates / Information Items (1<sup>st</sup> Board meeting per month) – **January report attached**

7. Monthly Financial Review (2<sup>nd</sup> Board meeting per month) – **In order to ensure that all of the expenses related to year 2017 are properly recorded and in the ledger, we are extending the monthly close-out until 01/23/2018. This is a longer period of time than our normal one week, but it is necessary to properly cutoff expenses for 2017 and to be prepared with accurate balances for the full financial audit. So, the monthly report, usually provided to the Board by the second meeting will be delayed until the first meeting in February.**

8. Monthly System Operations Overview (2<sup>nd</sup> Board meeting per month) – **December 2017 report attached**

9. Staff Comments

10. Solicitor's Comments

11. Public Comments / Other Comments

12. Executive Sessions

13. Adjournment

**UPCOMING BOARD MEETINGS**

*Meetings begin at Noon at LCA's Main Office, unless noted otherwise below.*

February 12, 2018

February 26, 2018

March 12, 2018

**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. During the Public Comment portions of 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 December 11, 2017**

---

The Regular Meeting of the Lehigh County Authority was called to order at 12:00 p.m. on Monday, December 11, 2017, Chairman Brian Nagle presiding. Other Members present at the commencement of the meeting were: Linda Rosenfeld, Jeff Morgan, Richard Bohner, Norma Cusick, and Deana Zosky. Authority Staff present were Liesel Gross, Brad Landon, Ed Klein, Pat Mandes, Chuck Volk, Chris Moughan, John Parsons, Susan Sampson, and Lisa Miller.

### **REVIEW OF AGENDA**

Chairman Nagle announced that today's Board meeting is being videotaped and streaming live and recordings will be posted to the Authority's website.

Liesel Gross noted there is a correction to the Agenda under Wastewater with the addition of the EPA Administrative Order update discussion. There will also be an Executive Session at the end of the regular agenda to discuss potential litigation.

Scott Bieber arrived at 12:01 p.m.

### **APPROVAL OF MINUTES**

#### **November 13, 2017 Regular Meeting Minutes**

On a motion by Richard Bohner, seconded by Norma Cusick, the Board approved the Minutes of the November 13, 2017 meeting (6-0). Deana Zosky abstained.

### **PUBLIC COMMENTS**

None.

### **ACTION AND DISCUSSION ITEMS**

#### **Connection Fees & Customer Facilities Fees (Resolution No. 12-2017-1)**

Liesel Gross explained that the resolution establishes the various components of the Lehigh County Authority Capital Recovery Fees for the connection fees and customer facilities fees for both the City and Suburban divisions. The fees are based on actual costs including equipment and labor, as detailed in the exhibit attached to the resolution.

On a motion by Linda Rosenfeld, seconded by Richard Bohner, the Board approved Resolution No. 12-2017-1 (7-0).

#### **2018 Board Meeting Schedule**

A list of the 2018 Board Meeting dates was presented to the Board for their approval and advertising. Liesel Gross noted that the second Board meeting in May has been moved up a week earlier to May 21, 2018 and listed as tentative because the Memorial Day holiday falls on May 28, 2018. If there are no agenda items for the May 21, 2018 meeting, it can be cancelled.

On a motion by Norma Cusick, seconded by Jeff Morgan, the Board approved the 2018 Board meeting schedule and requested it be advertised (7-0).

**Construction Phase Change Order – Allentown Division – Wastewater Treatment Plant: Digester Cover Replacements**

Phil DePoe gave an overview of the Construction Phase Change Order which is required to close out final payment to the contractor. Mr. DePoe explained the change order is needed due to the additional dry tons removed from the digester cleaning process that was a larger amount than what had been estimated.

On a motion by Linda Rosenfeld, seconded by Norma Cusick, the Board approved the Capital Project Authorization Amendment No. 2 in the amount of \$87,895.00 (7-0).

**2018 SCARP Program Management**

Pat Mandes requested approval of a Professional Services Authorization for Arcadis in an amount not to exceed \$70,000.00 for 2018 SCARP (Sewer Capacity Assurance and Rehabilitation Program for the Western Lehigh Interceptor service area) program management services. Ms. Mandes reviewed the list of proposed scope of services. Deana Zosky questioned if this is in the budget and if it is, why is separate approval being requested. Liesel Gross explained that it is in the budget and the reason for the approval is that any Professional Services Authorization over \$40,000.00 requires Board approval. Ms. Mandes explained that the costs are part of the Western Lehigh Capital Budget and are reimbursed by our partners. Ms. Gross stated this is part of the User Charge report that is prepared annually by Jennifer Montero.

Kevin Baker arrived at 12:16 p.m.

Ms. Zosky requested that the Board receive copies of documentation prepared by Arcadis as part of this work, we well as a regular report of activities that outline the planned work versus actual work completed. Ms. Mandes explained that Arcadis prepares semi-annual and annual reports for submission to the regulatory agencies that outlines this detail, and these reports are posted on the Authority's website and provided to the Board. In addition, after a plan is developed and submitted to EPA and DEP, additional regular progress updates can be provided to the Board. Liesel Gross also explained that the Administrative Order is one of the four main goal areas of the organization and will continue to be tracked and discussed with the Board throughout 2018.

On a motion by Norma Cusick, seconded by Linda Rosenfeld, the Board approved the Professional Services Authorization for Arcadis in an amount not to exceed \$70,000.00 (7-0). Kevin Baker abstained because he had just arrived to the meeting and was not part of the discussion.

**USEPA Administrative Order – Update**

Liesel Gross presented a PowerPoint presentation to the Board updating them on the corrective action plan being developed to submit to the EPA (United States Environmental Protection Agency) by the end of 2017, highlighting key elements of the plan. Deana Zosky questioned cost sharing among the municipalities served by the regional system. Liesel Gross explained the communities in the Western Lehigh service area are continuing to work toward a cost-sharing agreement for future phases of the planned work, and that the costs for the first phase of work planned for 2018 through 2026 will be shared proportionately based on each municipality's purchased treatment allocation.

Ms. Gross then explained that the corrective action plan has not be finalized for submission to EPA in December as previously planned because the Authority and all municipalities recently received notice from EPA extending the deadline for submission. This notice followed a series of correspondence between the City of Allentown and EPA regarding the City's planned approach to addressing the Administrative Order. Authority officials also met with EPA directly earlier in the

month to share concerns specific to the Western Lehigh service area and how plans developed by the Authority must be coordinated with plans developed by the City. EPA's notice of the submission deadline extension also referenced plans for a joint meeting with all affected municipalities in January to discuss the path forward. There was some Board discussion regarding capacity and whether the Board's concerns regarding dry-weather issues are being addressed. Ms. Gross explained that the plan elements presented earlier in this discussion would be designed to address both dry-day and wet-weather conveyance capacity issues for current and future flows.

Scott Bieber requested to see the spreadsheets that calculate flow credits available for future growth. Pat Mandes explained how the credits are accounted for and noted they are included in the annual report to DEP that is provided to the Board. She also noted that since the rehabilitation effectiveness monitoring results have not been finalized for the recent source removal work completed by the Western Lehigh communities, no flow credits have been calculated for the work. All flow credits must be submitted to and approved by DEP (Pennsylvania Department of Environmental Protection).

### **MONTHLY PROJECT UPDATES/INFORMATION ITEMS**

Scott Bieber inquired if DEP has mandated a regulatory limit on radon as noted under the Buss Acres Pump Station Replacement. Chuck Volk replied that the consultant is looking at the cost of radon removal during a future phase of the project but the Authority has not been informed of any DEP mandates.

Liesel Gross announced that the Monthly Financial report and the Monthly Systems Operations Review report for November will be sent to the Board and posted on the website later in December since there is no second Board meeting in December. Board members should contact Ms. Gross with any questions about these items.

### **STAFF COMMENTS**

None.

### **SOLICITOR'S COMMENTS**

None.

### **PUBLIC COMMENTS / OTHER COMMENTS**

Linda Rosenfeld suggested the Chairman announce at the beginning of each meeting that the Board has received the agenda and supporting materials prior to the meeting to ensure the public is aware that materials are available and distributed in advance of decisions that are made.

Chairman Nagle called a break at 12:55 p.m. The meeting reconvened at 1:01 p.m.

### **EXECUTIVE SESSION**

An Executive Session was held at 1:02 p.m. to discuss potential litigation. The Executive Session ended at 1:45 p.m.

### **ADJOURNMENT**

There being no further business, the Chairman adjourned the meeting at 1:45 p.m.

---

Richard H. Bohner  
Secretary

# RESOLUTION No. 1-2018-1

(Duly adopted 22 January 2018)

***A RESOLUTION PROPOSING AMENDMENT OF THE AUTHORITY'S ARTICLES OF INCORPORATION TO EXTEND THE AUTHORITY'S TERM OF EXISTENCE FROM 9 JUNE 2049 FOR A FULL ADDITIONAL FIFTY YEARS PERIOD***

WHEREAS, the Lehigh County Authority (the "Authority") was duly formed by the Board of Commissioners of Lehigh County (the "Board of Commissioners") under the Pennsylvania Municipality Authorities Act, with the Articles of Incorporation having been filed and approved by the Department of State of the Commonwealth of Pennsylvania (the "Department") on 21 September 1966 and amendments approved and filed with the Department on 3 June 1970, 22 April 1975, 9 June 1999 and 2 May 2014; and

WHEREAS, the Municipality Authorities Act establishes an initial term of existence for municipal authorities of fifty years from the approval of the Articles of Incorporation, which in the case of the Authority would have expired on 21 September 2016, but to accommodate financing of capital improvements for its systems, the date was extended by the 9 June 1999 Amendment until 9 June 2049; and

WHEREAS, the Authority continues to have the need to arrange financing for capital improvements to its many water and wastewater systems serving fourteen municipalities; and

WHEREAS, limiting financing to the remaining Authority life will result in substantially increased costs and higher rates to the public for capital project financing;

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Authority proposes that its Articles of Incorporation be amended to include a provision extending its term of existence for an additional fifty year period from the date such amendment is approved by the Department so that it may continue to provide capital improvements for the public with the most reasonable and favorable financing rates. The form of the Articles of Amendment, without appendices that will be attached before submittal to the Department, is attached hereto as Exhibit A and thereby made a part hereof.

2. This Resolution, and its proposal, is to be presented to the Board of Commissioners for their consideration and adoption.

3. Upon adoption by the Board of Commissioners, the Articles of Amendment are to be executed and verified by two officers of the Authority, advertised in accordance with the Municipality Authorities Act, and submitted to the Department for approval in accordance with the time frame necessary for any Authority financings.

On motion of \_\_\_\_\_, seconded by \_\_\_\_\_, this resolution was adopted the 22<sup>nd</sup> day of January 2018.

ARTICLES OF AMENDMENT

TO: SECRETARY OF THE COMMONWEALTH OF PENNSYLVANIA

In compliance with requirements of the Pennsylvania Municipality Authorities Act and pursuant to a resolution duly adopted by the Board of Lehigh County Authority proposing an amendment to the Articles of Incorporation of the Authority, which proposed amendment has been submitted and adopted and approved by the Board of County Commissioners of the County of Lehigh, Pennsylvania (the governing authority of the municipality forming the Authority) by an ordinance duly adopted, the Authority does file these Articles of Amendment to its Articles of Incorporation and does certify:

1. The name of the Authority is LEHIGH COUNTY AUTHORITY and the registered office of the Authority presently is 1053 Spruce Road, Wescosville, Pennsylvania, with a mailing address of P.O. Box 3348, Allentown, Pennsylvania 18106-0348.

2. The Authority has been duly formed under the Pennsylvania Municipality Authorities Act, the Articles of Incorporation having been filed and approved by the Pennsylvania Department of State of on 21 September 1966, with Articles of Amendment filed and approved by the Department on 3 June 1970, 22 April 1975, 9 June 1999 and 2 May 2014.

3. A copy of the ordinance by the Board of Commissioners of the County of Lehigh, Pennsylvania, duly certified by the Chief Clerk of said Board of County Commissioners, adopting the amendment herein set forth, is attached hereto as Appendix I and thereby is made a part of these Articles of Amendment.

4. A copy of the resolution by the Board of the Lehigh County Authority, proposing the amendment herein set forth, is attached hereto as Appendix II and thereby is made a part of these Articles of Amendment.

5. The amendment proposed by the Board of the Authority and adopted and approved by the Lehigh County Board of Commissioners, is to amend the Articles of Incorporation of the Authority as follows:

"The Authority shall have a term of existence continuing through and until the date fifty years after the date of Pennsylvania Department of State approval of the Authority's fifth Articles of Amendment."

IN WITNESS WHEREOF, the Lehigh County Authority has caused these Articles of Amendment to be executed and verified by two Authority officers and its official seal to be affixed hereunto and attested by its Secretary or Assistant Secretary, all as of the \_\_\_\_\_ day of \_\_\_\_\_ 2018.

Attest:

LEHIGH COUNTY AUTHORITY

\_\_\_\_\_  
Name  
Office

By: \_\_\_\_\_  
Name:  
Office:

\_\_\_\_\_  
Name  
Office

By: \_\_\_\_\_  
Name:  
Office:





# Water Sector Collaboration on Effective Utility Management

## Fact Sheet

May 2007

### BACKGROUND

In May 2006, the Association of Metropolitan Water Agencies; the American Public Works Association; the American Water Works Association; the National Association of Clean Water Agencies; the National Association of Water Companies; the United States Environmental Protection Agency; and the Water Environment Federation entered into a Statement of Intent<sup>1</sup> to “formalize a collaborative effort among the signatory organizations in order to promote effective utility management.” These “Collaborating Organizations” chartered the Effective Utility Management Steering Committee (Committee) to advise them on a future, joint water utility sector management strategy applicable to water sector utilities across the country. This fact sheet summarizes the Committee’s findings and recommendations.

The Committee found that water sector utilities across the country face common challenges, such as rising costs and workforce complexities, and need to focus attention on these areas to deliver quality products and services and sustain community support. Within this context, the Steering Committee identified four primary building blocks of effective water utility management, which could become the basis of a future water utility sector management strategy. These building blocks, described below, are: Attributes of Effectively Managed Water Sector Utilities, Keys to Management Success, Water Utility Measures, and Water Utility Management Resources.

### TEN ATTRIBUTES OF EFFECTIVELY MANAGED WATER SECTOR UTILITIES

The Committee identified “Ten Attributes of Effectively Managed Water Sector Utilities” (Attributes) that provide a succinct indication of where effectively managed utilities focus and what they strive to achieve. Further, the Committee recommended that the water utility sector adopt and utilize these Attributes as a basis for promoting improved management within the sector. The Attributes can be viewed as a continuum of, or a set of building blocks for, management improvement opportunities. The Attributes, are deliberately not listed in a particular order; since utility managers will determine their relevance and relative importance based on individual circumstances.

<sup>1</sup> See <http://www.epa.gov/water/infrastructure/utility-mgmt-joint-statement.pdf>.

<p><b>Product Quality</b></p> <p>Produces potable water, treated effluent, and process residuals in full compliance with regulatory and reliability requirements and consistent with customer, public health, and ecological needs.</p>	<p><b>Customer Satisfaction</b></p> <p>Provides reliable, responsive, and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.</p>
<p><b>Employee and Leadership Development</b></p> <p>Recruits and retains a workforce that is competent, motivated, adaptive, and safe-working. Establishes a participatory, collaborative organization dedicated to continual learning and improvement. Ensures employee institutional knowledge is retained and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development and strives to create an integrated and well-coordinated senior leadership team.</p>	<p><b>Operational Optimization</b></p> <p>Ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations. Minimizes resource use, loss, and impacts from day-to-day operations. Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.</p>
<p><b>Financial Viability</b></p> <p>Understands the full life-cycle cost of the utility and establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates—consistent with community expectations and acceptability—adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.</p>	<p><b>Operational Resiliency</b></p> <p>Ensures utility leadership and staff work together to anticipate and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and effectively manages a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.</p>
<p><b>Community Sustainability</b></p> <p>Is explicitly cognizant of and attentive to the impacts its decisions have on current and long-term future community and watershed health and welfare. Manages operations, infrastructure, and investments to protect, restore, and enhance the natural environment; efficiently use water and energy resources; promote economic vitality; and engender overall community improvement. Explicitly considers a variety of pollution prevention, watershed, and source water protection approaches as part of an overall strategy to maintain and enhance ecological and community sustainability.</p>	<p><b>Infrastructure Stability</b></p> <p>Understands the condition of and costs associated with critical infrastructure assets. Maintains and enhances the condition of all assets over the long-term at the lowest possible life-cycle cost and acceptable risk consistent with customer, community, and regulator-supported service levels, and consistent with anticipated growth and system reliability goals. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.</p>
<p><b>Stakeholder Understanding and Support</b></p> <p>Engenders understanding and support from oversight bodies, community and watershed interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. Actively involves stakeholders in the decisions that will affect them.</p>	<p><b>Water Resource Adequacy</b></p> <p>Ensures water availability consistent with current and future customer needs through long-term resource supply and demand analysis, conservation, and public education. Explicitly considers its role in water availability and manages operations to provide for long-term aquifer and surface water sustainability and replenishment.</p>

## KEYS TO MANAGEMENT SUCCESS

As a complement to the Attributes, the Committee identified five “Keys to Management Success” or approaches and systems that foster utility management success.

**1. Leadership:** Leadership plays a critical role in effective utility management, particularly in the context of driving and inspiring change within an organization. In this context, the term “leaders” refers both to individuals who champion improvement, and to leadership teams that provide resilient, day-to-day management continuity and direction. Effective leadership ensures the utility’s direction is understood, embraced, and followed on an ongoing basis throughout the management cycle.

**2. Strategic Business Planning:** Strategic business planning helps utilities balance and drive integration and cohesion across the Attributes. It involves taking a long-term view of utility goals and operations and establishing an explicit vision and mission that guide utility objectives, measurement efforts, investments, and operations.

**3. Organizational Approaches:** A variety of organizational approaches can be critical to management improvement. These approaches include establishing a “participatory organizational culture” that actively seeks to engage employees in improvement efforts, deploying an explicit change management process, and utilizing implementation strategies that seek early, step-wise victories to build momentum and motivation.

**4. Measurement:** A focus and emphasis on measurement is the backbone of successful continual improvement management and strategic business planning. Successful measurement efforts tend to be viewed on a continuum, starting with basic internal tracking.

**5. Continual Improvement Management Framework:** A “plan, do, check, act” continual improvement management framework typically includes several components, such as conducting an honest and comprehensive self-assessment; establishing explicit performance objectives and targets; implementing measurement activities; and responding to evaluations through the use of an explicit change management process.

The Committee recommended that the Keys to Management Success be referenced and promoted with the Attributes to enable more effective utility management within the sector.

## WATER UTILITY MEASURES

The Committee strongly affirmed measurement as critical to effective utility management. The Committee also noted that utility measurement is complicated and needs to be done carefully to be useful. The challenges presented by performance measurement include deciding what to measure, identifying meaningful measures, and making sure that data are collected in a way that allows meaningful comparisons to be made. Consideration of these factors is important if the data are to be used to make real improvements and to communicate accurate information, and help ensure that the information is interpreted correctly.

Within this context, the Committee identified a set of high-level, illustrative example water utility measures related to the Attributes and recommended that, to simply get started on exploring this component of the future sector strategy, these or other example utility measures be made available in a future sector strategy. These *preliminary* example measures included, for instance, under Operational Optimization, the amount of distribution system water loss; under Operational Resiliency, whether the utility has a current all-hazards disaster readiness response plan (yes/no)?; and, under Stakeholder Understanding and Support, whether the utility consults regularly with stakeholders (yes/no)?

The Committee recommended a longer-term initiative to identify a cohesive set of targeted, generally applicable, individual water sector utility measures. The goal would be to provide robust measures for individual utilities to use in gauging and improving operational and managerial practices and for commu-

nicating with external audiences such as boards, rate payers, and community leaders.

## **WATER UTILITY MANAGEMENT RESOURCES**

The Committee believed that water utilities are interested in tools that can support management progress, and that many utilities would benefit from a “helping hand” that can guide them to useful management resources, particularly in the context of the Attributes. Therefore, the Committee recommended that the future sector strategy include a “resource toolbox” linked to the Attributes and submitted a preliminary list of management resources that could be used as a starting point.

## **NEXT STEPS FOR THE SECTOR STRATEGY**

The Collaborating Organizations have identified the following actions to build upon the recommendations and work of the Steering Committee.<sup>2</sup>

### **Short-Term Actions**

- Implement a coordinated and comprehensive rollout of a sector strategy as soon as possible.
- Create a standard presentation kit that could be used by Collaborating Organizations, utilities, and others to explain the initiative and its findings.
- Create a basic resource toolbox to help utilities manage more effectively based on the Attributes and the Keys to Management Success.
- Develop a “primer” to help utility managers understand the background and objectives of the initiative and help them use the Attributes and apply the Keys to Management Success.
- Jointly sponsor web casts and other educational sessions to describe the initiative and its findings.

### **Long-Term Actions**

- Explore options to link the Attributes into existing Collaborating Organizations’ recognition or awards programs, as appropriate, and consider the need for a joint sector-wide recognition/awards program for utilities that adopt management strategies based on the Attributes and Keys to Management Success.
- Explore further partnerships with organizations that may be interested in the Steering Committee’s final report and in promoting the report’s findings and recommendations within their individual membership bases.
- Develop a cohesive set of targeted, generally applicable, individual water sector utility measures that could be used to gauge progress. This effort could build on existing programs and other sources of information.
- Continue to communicate and coordinate efforts to promote effective utility management.

<sup>2</sup> All commitments made by EPA and the other signatories in this document are subject to the availability of funds and budget priorities. Nothing in this document, in and of itself, obligates EPA or the other organizations to expend funds or enter into any contract, or other agreement or incur other financial obligations.

Lehigh County Authority - "LCA 2020" Goal Categories Key Performance Indicators

Goal #	Effective Utility Management (EUM) Attribute	Key Performance Indicators	Description	LCA Context / Why it's important
1	Product Quality	Elimination of SSOs / EPA CWA compliance	Sewer system under EPA Administrative Orders to eliminate Sanitary Sewer Overflows	LCA's most significant Product Quality challenge and regulatory compliance issue. Difficult to measure, however, due to regional nature of system, weather impacts and other uncontrollable factors.
		Small Water Systems - Disruption of Service	Water service reliability measure for LCA small systems vs. large systems.	LCA operates 12 water systems with less than 1000 connections each, plus 2 large water systems serving 55,000 connections. Service reliability is more challenging for small systems, but customer expectation is likely the same regardless of the size of the community.
		Small Water Systems - Regulatory Compliance	Number / ratio of days small systems are under a Tier 1 violation vs. large systems	See LCA Context for measure # 7. Small water systems have higher rates of boil advisories and other compliance issues.
		Small Wastewater Systems - Regulatory Compliance	Number of non-compliance events in small vs. large wastewater systems	LCA operates 7 small sewer systems with less than 1000 connections each, 5 of which include on-site package treatment plants, along with a large regional sewer system and wastewater treatment plant. In addition to regulatory compliance concerns noted in measure # 6, the small sewer systems face higher rates of non-compliance events such as plant bypasses, permit exceedences, etc.
2	Financial Viability	Debt Service Coverage Ratio	Adequacy of cash generated from operations to cover both operations and debt-related expenses	Illustrates that excess cash is being generated, which is needed for future capital and principal payments, and to avoid/limit future borrowing
		Internal vs. External Funding for Capex	Internal funding availability, after operations and debt-related expenses, to cover capital expenses	Allows for establishing Division-specific targets which will inform rate-making evaluations, assess future borrowing needs, and improve planning for future capital expenses
3	Infrastructure Stability	Asset Condition Assessment Coverage	Number / ratio of critical assets with condition assessed and categorized.	Emphasizes need for planned approach to asset management. Condition assessments under way for some, but not all assets currently - measuring will help keep focus on this effort.
		Planned Maintenance Ratio	Planned maintenance as a percentage of maintenance activities completed (planned and corrective)	Increased focus on preventive maintenance needed at LCA in certain areas, and measure will also provide focus for establishing consistent procedures for tracking maintenance activities
		Asset "Needs Addressed" Coverage	Condition assessments produce a catalog of needs to be addressed - repair, replace, etc. Measure will track progress on addressing needs that are identified	Important to track progress on addressing needs identified, to provide support for funding additional capital improvements and other expenses to maintain our assets.
4	Employee & Leadership Development	Training & Knowledge Management (KM) Coverage	Number / ratio of employees for which LCA has developed components as appropriate (e.g. training plan, succession plan, KM plan) for the employee risk category	LCA has large percentage of employees who are either new (growing their experience) or planning for retirement in a short time horizon. A tool already exists to establish risk profiles, and this measure will place additional focus on taking action based on those risks.
		Training Hours per Employee	Hours of training provided to each employee per year, categorized into key areas such as safety, on-the-job, certification-based, etc.	Focus here for LCA is on ensuring on-the-job training is occurring, especially between experienced and new employees prior to critical retirements. However, training hours on the job are difficult to track and requires a more standardized procedure for evaluating needs and effectiveness of the training provided.

Highlight indicates Action Plans drafted for 1/22/2018 discussion.

## LCA 2020: Strategic Goals & 3-Year Action Plan

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2019 Action Plan	2020 Action Plan
<b>Product Quality</b>						
Elimination of SSOs / EPA Clean Water Act compliance	Sewer system under EPA Administrative Orders to eliminate Sanitary Sewer Overflows – must be addressed for environmental compliance as well as to address future needs for system conveyance capacity.	LCA's most significant Product Quality challenge and regulatory compliance issue. Difficult to measure, however, due to regional nature of system, weather impacts and other uncontrollable factors.	Treat as a “project progress” report until approved corrective action plan is in place, when specific targets can be established and reported on.	<p>Complete AO project planning w/ WLI signatories, City and City signatories (dependent upon regulatory feedback &amp; municipal cooperation) – <b>CM</b></p> <p>LCA Suburban systems CMOM program – finalize and input into CityWorks – <b>OPS / IT</b></p> <p>City Division CMOM review – align with Operating Standards &amp; existing process for identifying / tracking trouble spots – <b>OPS</b></p> <p>Investigate &amp; develop Fats, Oils &amp; Grease (FOG) program – City Division – <b>CM</b></p> <p>Kick off PPS &amp; force main rehab projects – <b>CW</b></p> <p>Develop updated connection / planning module approval method for City &amp; Suburban – <b>CW / CM</b></p> <p>Complete “rebaseline” of WLI communities’ allocation – <b>CM</b></p> <p>City AO projects TBD – <b>CW</b></p>	<p>Complete PPS &amp; force main rehab projects – <b>CW</b></p> <p>Implement FOG program – Phase 1 – <b>CM</b></p> <p>Develop public education / outreach tools for FOG program &amp; clearwater connections – <b>CC</b></p> <p>Investigate / design wet-weather operating protocols for upgraded PPS, FEB and SCPS, tied to SCADA &amp; KITP – <b>OPS / IT</b></p> <p>Suburban CMOM measures achieved / reported – <b>OPS</b></p> <p>Finalize City Division CMOM &amp; input into CityWorks – <b>OPS / IT</b></p> <p>WLI system flow metering &amp; modeling – <b>CM</b></p> <p>City AO projects TBD – <b>CM</b></p>	<p>Develop lateral maintenance &amp; basement inspection programs for UMiT, WT &amp; LT – <b>OPS</b></p> <p>Implement FOG program – Phase 2 (if needed) – <b>CM</b></p> <p>Investigate alternatives for enhanced H2S management – <b>OPS / CW</b></p> <p>Analyze decide path forward on large WLI conveyance projects (Trexletown Interceptor / IRPS / other?) – <b>CM / CW</b></p> <p>Evaluate need for Act 537 reopener / KITP expansion – <b>CM / CW</b></p> <p>Alignment and documentation of WLI communities’ allocation, billable flows and peak flows. Reopen MOC discussions. – <b>CM</b></p> <p>Suburban &amp; City Division CMOM measures achieved / reported – <b>OPS</b></p> <p>City AO projects TBD – <b>CM</b></p>

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2019 Action Plan	2020 Action Plan
<b>Financial Viability</b>						
Financial plans and rates match up with operational and capital program needs	Cash generated from operations covers both operations and debt-related expenses; forward looking targets established to cover new debt/capex	<p>Excess cash must be generated, which is needed for future capital and principal payments, and to avoid/limit future borrowing, while also allowing for operational goals to be met.</p> <p>Division-specific evaluations, goals and plans are needed to address different needs of each “fund”</p>	<p>Debt Service Coverage Ratio</p> <p>Internal vs. External Funding for Capital Projects</p>	<p>Overall budget process improvement initiative – <b>ALL</b></p> <p>“Adaptive Insights” implementation – <b>FN</b></p> <p>Revised forecasting &amp; reporting tools – <b>ALL</b></p> <p>Capital plan development process improvement &amp; budget schedule alignment – <b>CW / FN</b></p> <p>Develop enhanced capital improvements prioritization methodology – <b>ALL</b></p> <p>Suburban water budget 5-year expense forecast based on O&amp;M targets – <b>OPS</b></p> <p>Internal services budget review &amp; process improvement – <b>FN</b></p> <p>Completion of 2019-2022 Suburban water rate study – <b>FN</b></p> <p>City Division financial evaluation &amp; options analysis for improved financial performance – <b>ALL</b></p> <p>Financial policy &amp; strategy documentation – <b>ALL</b></p> <p>Future capex financing plan for all divisions – <b>FN</b></p>	<p>Suburban wastewater budget 5-year expense forecast based on O&amp;M targets – <b>OPS</b></p> <p>Completion of updated tapping fees for Suburban – <b>FN</b></p> <p>Suburban wastewater common rate evaluation – <b>FN</b></p> <p>Implement “One LCA” asset / equipment sharing program – <b>OPS</b></p> <p>Implement department budget accountabilities &amp; reporting – <b>ALL</b></p> <p>Realign internal service budget allocations – <b>FN</b></p> <p>Implement payroll modifications / simplification (timing tied to CityWorks actions under asset management strategies) – <b>ALL</b></p> <p>Develop innovation teams focused on exploring process improvement, efficiency, revenue enhancement, etc. – <b>ALL</b></p>	<p>Innovation Team 1 – <b>??</b></p> <p>Innovation Team 2 – <b>??</b></p> <p>Innovation Team 3 – <b>??</b></p> <p>Innovation Team 4 – <b>??</b></p>



**FINANCE & ADMINISTRATION**

**ACTION ITEMS**

---

**1. Extension of Authority Term (Resolution No. 1-2018-1) – January 22, 2018**

The Authority wishes to have its term extended for an additional fifty years per the Pennsylvania Municipality Authorities Act in order to allow future financings at favorable rates, which requires an amendment to its Articles of Incorporation. The process involves the Authority Board passing a resolution and then the County Board of Commissioners approving it, since the County was the incorporating entity. Resolution No. 1-2018-1 is presented for Board consideration to begin this process.

**DISCUSSION ITEMS**

---

**1. LCA 2020 Action Plans – Part 1 – January 22, 2018**

Since 2016, the Authority has been developing strategic goals using guidance provided by the “Effective Utility Management” (EUM) framework developed by leading industry associations and regulatory agencies. In 2017, work began on developing key performance indicators for the selected goal areas, and three-year action plans on the top priority items. For Board discussion, a fact sheet about the EUM program is attached, along with summary list of the goals and KPIs selected, followed by the “LCA 2020” action plan outline for two of the four critical goals. These action plans will be discussed in January, with the remainder provided for discussion in February.

**INFORMATION ITEMS**

---

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

**CERTIFICATES OF DEPOSIT**

15-Nov-17

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
LLRI CR	PSDLAF Flex Pool		400,000.00	11/14/17	1/17/18	1.0
Cons Wtr (2)	PSDLAF Flex Pool		155,000.00	11/14/17	1/17/18	1.0
Cons LL2 (314)	PSDLAF Flex Pool		245,000.00	11/14/17	1/17/18	1.0
WW Capac	PSDLAF Flex Pool		600,000.00	11/14/17	1/17/18	1.0
Wtr R&R	PSDLAF Flex Pool		1,000,000.00	11/14/17	1/17/18	1.0

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

**2. Developments**

Water system construction is occurring in the following developments:



Spring View (Bortz Tract), 14 commercial units, UMT – No Change  
Trexler Business Center, 1 Commercial Lot with 6 commercial buildings, LMT – No Change  
Trexler Fields, Phase 1B/8/9, 100 residential lots (sfa), UMT – No Change

Water system plans are being reviewed for the following developments:

5354 Hamilton Blvd., 1 commercial lot, LMT  
CVS, 1 commercial lot, LMT  
Diocesan Pastoral Center, 2 commercial lots, 3 additional lots and residual lot for existing cemetery, LMT – No Change  
Farr Tract, 17 residential lots (sfd), LMT – No Change  
Grant Street Townes, 18 residential lots (sfa), WashT – No Change  
Green Acres Mobile Home Court, master meter 590 existing units (sfd), UMT – No Change  
Hickory Park Estates, 3 residential lots (sfd), UMT – No Change  
Hillview Farms, 31 residential lots (sfd), LMT/SWT – No Change  
Indian Creek Industrial Park, 6 commercial lots, UMiIT, water and sewer – No Change  
Kohler Tract, 125 residential lots (sfa), UMiIT, water and sewer – No Change  
Lehigh Hills, Lot 5, Phase 1, 273 apartments & clubhouse, UMT – No Change  
Madison Village at Penn's View, 66 manufactured homes, 1 lot, LynnT, water and sewer – No Change  
Millbrook Farms, Section VI, 45 residential lots (sfd), LMT – No Change  
Morgan Hills, 40 residential lots (sfd), WeisT, water and sewer – No Change  
Parkland School District, new elementary school, 1 lot, UMT – No Change  
Schoeneck Road, Lot 1, 1 lot warehouse, LMT – No Change  
Shepherd's Corner, 1 commercial lot, LMT – No Change  
Spring Creek Properties Settlement Subdivision, Lot 1, 1 commercial lot, LMT – No Change  
Stone Hill Meadows, Phase 2, 85 residential units (sfd), LMT – No Change  
Weilers Road Twins, 82 residential lots (sfa), UMT – No Change  
Woodmere Estates, 60 residential units (sfd), UMT – No Change

Sewage Planning Modules Reviewed in Prior Month:

Stone Hill Meadows, Phase 3, Macungie, 6,913 gpd  
Millbrook Farms VI, LMT, 10,035 gpd

**WATER****ACTION ITEMS**

---

**DISCUSSION ITEMS**

---

**INFORMATION ITEMS**

---

**1. Allentown Division – Hamilton Street Cedar Creek Bridge Water Main Relocation Project**

As part of the Pennsylvania Rapid Bridge Replacement Program, the replacement of the Cedar Creek Bridge on Hamilton Street has required the relocation of approximately 500 linear feet of water main. The Design phase was approved at the December 2016 Board meeting. As of June 2, 2017 Gannett Fleming our Engineer has submitted their design of the relocation to the state and is awaiting their approval. It is anticipated that this work will be reimbursed 100% by the state and that the construction related activities will be incorporated within the state's work. **(No Change)**

**2. Allentown Division – Pre-Lease Valve Replacements**

The project scope includes the replacement of approximately 50 inoperable valves in multiple locations throughout the City that existed prior to the lease settlement. The bid was authorized for award at the June 26, 2017 Board meeting. As of late November 2017, our contractor has completed 100% of their contract. LCA anticipates by year end that the project will be closed out as we are currently in the process of project closeout with our contractor. The project is classified as uncompleted work and will be funded by the City of Allentown.

**3. Allentown Division – Schantz Spring Main Replacement**

The project is the replacement of approximately 2,000 linear feet of 1903 vintage 30-inch diameter water main in Martin Luther King, Jr. Boulevard from the Water Filtration Plant heading towards Schreibers Bridge. This project also includes addressing other leaks that were identified during the "SmartBall" leak detection work completed by the City of Allentown (COA). Bids were received on July 13, 2017. The Board approved the construction contract at the July 24, 2017 Board meeting, Notice to Proceed was issued August 29, 2017. As of December 15, 2017, our contractor has completed nearly 100% of all leak site repairs and 95% of the main line replacement on MLK Blvd. LCA anticipates that the contractor will complete all pipe line install by January 19, 2018 with restoration to be completed in the weeks and months preceding weather permitting. This project is identified as Schedule-7 Work and will be funded by LCA Allentown Division.

**4. Allentown Division – Schantz Spring Exposed Main Replacement**

This project will replace approximately 110 linear feet of the 30-inch diameter water main that supplies water from Schantz Spring to the Water Filtration Plant on the county's property at Cedarbrook where the line crosses a swale from I-78. The project will demolish the concrete culvert that carries the pipe over the swale and install a new pipe under the swale. The project will be funded by the LCA Allentown Division. The Public Water Supply Permit was issued by DEP in August 2017. The construction contract has been signed and a preconstruction meeting held. As of December 15, 2017 the contractor has installed all proper E&S control and has cleared and grubbed the site in preparation for the installation of the new main. LCA anticipates that the contractor will complete all pipeline installation by January 15, 2018. Construction will be coordinated with the on-going main replacement project in Martin Luther King, Jr. Boulevard at the Water Filtration Plant.

**5. Allentown Division – Water Plant: Carbon Dioxide Feed System**

The project consists of the addition of a carbon dioxide feed system at the Allentown Water Plant. The original plant, built in 1928, didn't include an acid feed system, and neither upgrade in 1953 or 1995 added one either. With the present conversion from alum to polyaluminum chloride as the plant's primary coagulant, proper treatment requires that the raw water must be kept within a very small pH range. Without an acid feed system, it is impossible to do that. Board approval for the construction phase is expected in February. Installation and startup is expected by mid-April 2018.

6. **Suburban Division – CLD Auxiliary Pump Station Project**

The project will feature the installation of a new booster pumping station and water main extension to pump water from the Lower Pressure System to the Upper Pressure System. The project will also involve installation of a SCADA system. The Public Water Supply (PWS) permit application package was submitted to DEP. Design and permitting of the pump station will be completed in early 2018, and the station will be constructed in 2018 **(No Change)**.

7. **Suburban Division - Water Main Replacement Program Cycle 3**

The project consists of the replacement of approximately 1 mile of aged and/or failing Cast Iron water main. The design phase of this project was approved at the January 2015 Board meeting. Bids were received on July 13, 2017. The Board approved the construction contract at the July 24, 2017 Board meeting, Notice to Proceed was issued August 29, 2017. As of late November 2017, our contractor has completed 100% of their contract with LCA and is in the process of project closeout **(No Change)**.

8. **Suburban Division - Water Main Replacement Program Cycles 1 & 2**

The project consists of the replacement of 2.85 miles of aged and/or failing Cast Iron water main. The Construction phase was approved at the 4/11/16 Board meeting. As of late July 2017 the contractor, Anrich Inc., has completed all punch list item deficiencies. LCA is under discussions with Anrich, Inc. to close out the project **(No Change)**.

9. **Suburban Division – Upper Milford-CLD Interconnection Project (Kohler Tract)**

The project will feature the installation of a new booster pumping station and water main extension to pump water from the Central Lehigh Division (CLD) to the 125-lot Kohler Tract subdivision in Upper Milford Township. Design of the pump station is under way and the Public Water Supply (PWS) permit application package was submitted to DEP. We made offers to two property owners where easements are needed **(No Change)**.

10. **Suburban Division – Pine Lakes Pumping Station Improvements**

This project was originally bid in July 2016 and bids were subsequently rejected due to the lack of competitiveness and significant exceedance of the engineer's estimate. The project was modified and rebid in May 2017 resulting in greater bidder interest and lower prices. The purpose of this project is to upgrade the original hydro-pneumatic well station (built in mid-1970s) to continue the level of service, replace aged and problematic equipment, reduce the probability and consequence of risk, and prolong the useful life of the station. The station is to be upgraded to a double pumping variable speed system with full SCADA telemetry. A pre-construction meeting was held in August and work began in fall 2017 **(No Change)**.

11. **Suburban Division – Asset Management Facility Upgrades**

Project includes the construction of improvements that were identified and prioritized in the Building Condition and Assessment Study prepared by D'Huy Engineering in accordance with LCA's asset management goal. The project scope includes structural, HVAC, and electrical/code improvements to be performed on facilities that were assigned a high risk score (high consequence and probability of failure). Nine (9) water facilities and two (2) wastewater facilities are part of the project scope. The project bids were opened on May 30, and

authorization to award was given at the June 26, 2017 Board meeting. Construction is anticipated to be completed by the end of January 2018 **(No Change)**.

**12. Suburban Division – Crestwood Alternate Water Supply**

The project consists of abandonment of existing wells and storage tank currently serving higher elevation customers and a connection of the pumping station to the main North Whitehall Division System. The project will also involve installation of a SCADA system. The project bids were opened on July 7 and authorization to award was given at the July 24, 2017 Board meeting. A pre-construction meeting was held in September. Construction started in October 2017 and will be completed in the first quarter of 2018.

**13. Suburban Division – Well Abandonments**

The project consists of the abandonment of six wells that are no longer used due to water quality issues: WL4, WL7, NL7, NL8, NL9, and NL10. Authorization to award a professional services agreement to ARRO Consulting Engineers was given at the July 24, 2017 Board meeting. Construction began in September 2017 and will be completed in early 2018 **(No Change)**.

**14. Suburban Division – 2017 Water Meter Replacement Project**

The project consists of the replacement of approximately 2000 residential meters and 430 commercial meters as well as replacing “non-read” meters with new transceiver units. Residential meters which are 20 years and older and commercial meters 15 years and older will be replaced. All meters will be upgraded to the most current radio read capability. The project was approved at the September 25, 2017 Board meeting. The Notice to Proceed was issued in November. Replacement of meters will begin the second week of January 2018.

**15. Suburban Division – Buss Acres Pump Station Replacement**

The project consists of the consolidation and replacement of two well stations with a single new pump station and a new water storage tank to replace two antiquated hydropneumatic pump stations. The new station will be a variable frequency drive controlled double pumping system with full SCADA control. The design will accommodate the future addition of radon removal equipment to be implemented upon DEP’s mandate of a regulatory limit. Design phase was authorized at the 8/28/17 board meeting, and the project is anticipated to be ready for bidding in Spring 2018. **(No Change)**

## WASTEWATER

### ACTION ITEMS

---

### DISCUSSION ITEMS

---

### INFORMATION ITEMS

---

1. **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). A Major Capital Improvement (MCI) Conceptual Design has been approved by the City. Board approval of the construction phase was received at the 2/8/16 Board Meeting. The new Secondary Digester cover was installed in late October 2016 and its construction was completed in late February of 2017. The new Primary No. 1 Digester Cover is also installed and is now operational. Project closeout is underway. This Project is identified in the Lease as a Schedule 7 (required) project and was funded by the LCA Allentown Division.

2. **Allentown Division – Wastewater Treatment Plant: WWTP Security Upgrades**

This project involves the installation of security related equipment upgrades at the Kline's Island Wastewater Treatment Plant (WWTP). Enhanced security will further reduce the risk of breaches that may impair the operation of the facility. Board Approval of the CoStars Agreement with Tyco (to purchase the security cameras, doors, etc. upfront) was granted at the January 23, 2017 Board Meeting. Approval of the electrical contractor to install the security equipment was granted at the May 22, 2017 Board Meeting. Construction of the project began in late July of 2017 and was completed in late-December. Project closeout is underway. This Project is identified as an Uncompleted Work (UW) in the Lease Agreement and will be funded by the City of Allentown.

3. **Allentown Division – Wastewater Treatment Plant: Electrical Substation Replacements**

This project involves the replacement of the existing 12.4 kV Switchgear and existing Substation No. 1 and No. 2. The equipment was installed in 1977 and has reached the end of its useful life. The City has reviewed this and has approved this project as a Major Capital Project. Approval of the design engineer was granted at the May 8, 2017 Board Meeting. Approval of the construction contract is tentatively scheduled to be requested at a March 2018 Board Meeting. Construction of the project is expected to begin in May of 2018 and be completed by mid-2019. This Major Capital Project will be funded by the LCA Allentown Division.

4. **Allentown Division – Wastewater Treatment Plant: Miscellaneous Improvements**

In December 2016, the drive unit on Final Clarifier #5 at Kline's Island WWTP experienced a complete failure. The drive was the original unit that was installed during construction of the clarifier in 1968. An emergency declaration was declared to reduce the installation time by several weeks. A request for a retroactive emergency declaration was requested and approved at the January 9, 2017 Board meeting. The drive was installed in April 2017 and is now fully operational. The remaining mechanisms of Final Clarifier #5, and the drive unit and similar mechanisms of Final Clarifier #6 have also reached the end of their useful life and will be replaced in early 2018. Construction approval was granted at the August 28, 2017 Board meeting. Construction should be completed by 2Q 2018. This capital project will be funded by the LCA Allentown Division.

5. **Allentown Division – Kline's Island WWTP Phase 1 AO Design Improvements**

This project includes the design of the AO improvements at the wastewater treatment plant. This conceptual design concept was approved by the City and the relevant final deliverables were

received by LCA. The City then directed LCA to proceed with the final design of improvements related to the blending alternative. Board approval for the Professional Services Authorization with Kleinfelder East, Inc. was granted at the September 11, 2017 Board Meeting. The project is identified as Administrative Order Work and will be funded by the City. Construction is expected to begin in early 2019 and is expected to be complete in early 2021, subject to regulatory review and approval.

**6. Allentown Division – Kline’s Island WWTP Master Plan**

This project involves development of a Master Plan that is required as part of the lease with the City of Allentown. The Master Plan is similar in scope to what was done previously for the Allentown Water System in 2017, and this project will include Condition Assessments, Process Optimizations, and both short-term and long-term Capital Plans. The city lease requirements dictate that the Master Plans must be updated every 5 years for the duration of the lease, and 2018 is the first year that a Master Plan is to be prepared. A Request for Proposal (RFP) was released to five (5) previously qualified firms on 12/15/2017. Award of the contract is planned for Q1 2018 and the project will run through the majority of 2018.

**7. Suburban Division – Test & Seal Project, Western Lehigh Interceptor Service Area**

Project consists of sanitary sewer cleaning, inspections via CCTV, cured-in-place point repairs, pressure testing and chemical grout sealing of joints, and post construction inspection for sanitary sewer lines located in western and central Lehigh County previously identified as areas subject to leakage. This project is part of the SCARP program. Construction began in August 2016 and is expected to finish by the end of Summer 2017; additional scope work is being completed by the early 2018. **(No Change)**

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

This project will upgrade the wastewater treatment plant (WWTP) headworks to install a mechanical fine screen, in order to protect the influent pumps and mitigate rag buildup. The project is funded by the Lynn Township Suburban Division. The contractor has installed the meter vault. The mechanical screen was also installed and a successful startup performed. The chemical feed line must still be installed along with some minor plumbing and electrical work **(No Change)**.

**9. Suburban Division – SCARP**

All AO Respondents received a letter from EPA indicating that an extension has been granted for submission of the Implementation Plan. In January, EPA would like to hold a meeting with the respondents to develop a path forward. EPA has indicated that the following critical elements should be included in the submissions including: collection system operation and maintenance plan, system characterization, source removal, flow modeling, and flow targets. The meeting is currently being scheduled.

**10. Suburban Division – Park Pump Station Upgrade Design**

The Park Pump Station is to be upgraded to address station capacity and age/condition issues, and prolong the service life of this critical facility. The existing pumps are to be replaced with dry pit submersible units, existing motors are to be replaced with high efficiency units, and the old rheostat type motor drives are to be replaced with variable speed drives. The MCC is also to be replaced along with miscellaneous mechanical improvements. The DEP Part 2 Water Quality Management Permit application was submitted to DEP in June 2017, and approved on 9/27/17. Design has been completed and the project was advertised for bid. The pre-bid meeting will be held on 1/8/18 and bids will be opened in on 1/25/18. Authorization of award of bid is anticipated to be requested at the 2/12/18 meeting.

**11. Suburban Division – Spring Creek Pump Station**

This project involves the following upgrades to the existing pumping station: Install a comminutor to reduce buildup of debris on the bar screens, replace the manually operated weir gates with new motorized weir gates, and upgrades to the SCADA system. Design of the project is complete. The Notice to Proceed was issued on December 12, 2017. Construction will begin in early 2018 **(No Change)**.

**12. Suburban Division – Heidelberg Heights Sanitary Sewer Rehabilitation**

This project involves replacement of approximately 1000 feet of 8-inch sewer main and 60 sewer laterals in the Heidelberg Heights sanitary sewer system. Recent internal CCTV inspection of the system revealed numerous pipe breaks, root intrusions, and other defects that has resulted in excessive infiltration of groundwater, particularly during storm events. The targeted sewer lines appear to be in the worst condition, and have the highest priority for replacement. This project is part on an on-going effort to reduce hydraulic overloads at the Heidelberg Heights wastewater treatment plant. The project will be advertised for bid in January 2018 with bid opening in February 2018.

Lehigh County Authority

System Operations Review - December 2017

Presented: January 22, 2018

<u>Critical Activities</u>	<u>System</u>	<u>Description</u>	<u>Dec-17</u>	<u>2017-to-Date</u>	<u>2016 Totals</u>	<u>Permit</u>
			<u>Daily Avg (MGD)</u>	<u>Daily Avg (MGD)</u>	<u>Daily Avg (MGD)</u>	<u>Daily Max (MGD)</u>
Water Production	Allentown	Total	20.12	21.16	20.41	39.0
		Schantz Spring	6.23	6.39	5.91	9.0
		Crystal Spring	3.92	3.89	3.86	4.0
		Little Lehigh Creek	9.97	10.84	10.46	30.0
		Lehigh River	0.00	0.03	0.18	28.0
	Central Lehigh	Total	9.00	9.29	9.27	19.04 MGD Avg
		Feed from Allentown	6.87	6.94	5.99	7.0 MGD Avg 10.5 MGD Max
		Well Production (CLD)	2.13	2.35	3.28	8.54 MGD Avg
		Sum of all (12) other Suburban Water Systems	0.18	0.18	0.19	1.71 Sum of all wells
Wastewater Treatment		Kline's Island	27.42	30.78	29.67	40.0
		Pretreatment Plant	3.85	4.35	4.33	5.75 (design capacity)
		Sum of all (5) other Suburban WW Systems	0.15	0.16	0.17	0.36
			<u>Dec-17</u>	<u>2017-to-Date</u>	<u>2016 Totals</u>	
Precipitation Totals (inches)			1.88	50.18	36.82	
Compliance Reports Submitted to Allentown			18	291	269	
Notices of Violation (NOVs)	(Allentown + Suburban)		0	3	3	
Sanitary Sewer Overflows (SSOs)/Bypasses	(Allentown + Suburban)		0	22	16	
Main Breaks Repaired	Allentown		6	19	19	
	Suburban		1	12	11	
Customer Service Phone Inquiries	(Allentown + Suburban)		2,130	27,313	28,099	
Water Shutoffs for Non-Payment	(Allentown + Suburban)		9	1,577	1,685	
Injury Accidents	(Allentown + Suburban)		0	8	10	
Emergency Declarations	Allentown		0	(2) @ \$51,235	(2) @ \$87,079	
	Suburban		0	(1) @ \$72,554	(1) @ \$33,495	

**Significant Repairs:** The five (5) mile Schantz Spring Transmission Line is currently undergoing an upgrade where approximately 2000' of 30" main immediately upstream of the water plant is being replaced due to the presence of a significant amount of leaks. Also included in the project is a new flow meter and meter pit outside of the plant and new pipe restraints into the building that were badly deteriorated since their installation in 1953. Tie-ins to the plant and existing main will be done in early January and project completion is expected by the end of January, 2018.

**Description of NOVs and/or SSOs:** There were no SSOs, Bypasses or NOVs for either of the Suburban or Allentown systems during December 2017.

**Other Highlights:** During the Schantz Spring Transmission Line Replacement Project, there will be very limited access to the water plant by the public. In the interest of public safety, water shutoffs for non-payment in Allentown were suspended for the duration of the project because those wishing to pay their delinquent water bills would not have safe or easy access to the plant. Shutoffs will resume when the construction project is completed.