



LEHIGH COUNTY AUTHORITY

LCA Main Office:
1053 Spruce Road
Wescosville, PA 18106
610-398-2503

Agendas & Minutes Posted:
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BOARD MEETING AGENDA – March 13, 2017

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. 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

- *February 27, 2017 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *2017 Goals (blue)*

WATER

- *Drought and Water Supply Monitoring Program (yellow)*

WASTEWATER

6. Monthly Project Updates / Information Items (1st Board meeting per month) – **March 2017 report attached**

7. Monthly Financial Review (2nd Board meeting per month)

8. Monthly System Operations Overview (2nd Board meeting per month)

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.

March 27, 2017

April 10, 2017

April 24, 2017

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
February 27, 2017

The Regular Meeting of the Lehigh County Authority was called to order at 12:02 p.m. on Monday, February 27, 2017, Secretary Richard Bohner presiding. Other Members present at the commencement of the meeting were: Linda Rosenfeld, Kevin Baker, Tom Muller, and Norma Cusick. Authority Staff present were Liesel Gross, Brad Landon, Chuck Volk, Ed Klein, Pat Mandes, John Parsons, Chris Moughan and Lisa Miller.

Brad Landon instructed the Board, since the Chairman and Vice Chairman of the Board were not present, it must elect a Chair pro tem. On a motion by Tom Muller, seconded by Norma Cusick, the Board elected Richard Bohner as Chair pro tem of the meeting (5-0).

REVIEW OF AGENDA

Liesel Gross announced that today's Board meeting is being videotaped and streaming live which, if successful, will then be posted to the Authority's website. A statement regarding the live video recording is noted on the agenda and signage is placed in the room to inform anyone attending that the meetings are being recorded.

Ms. Gross also announced there will be an Executive Session regarding potential litigation. Also, the 2017 Goals will be deferred to a March meeting when all Board members are anticipated to be present.

Ted Lyons arrived at 12:05 p.m.

APPROVAL OF MINUTES

February 13, 2017 Regular Meeting Minutes

Richard Bohner suggested a correction on the first page under Wynnewood and Sand Spring Wastewater Treatment Plant Replacement that the word (*consultant*) be removed after the words *Contract Award* and also the same be removed from the motion.

On a motion by Norma Cusick, seconded by Linda Rosenfeld, the Board approved the Minutes of the February 13, 2017 meeting as revised with the above noted changes (6-0).

PUBLIC COMMENTS

Robert Hamill, Lower Macungie Township, was present and commented he has never seen the Little Lehigh Creek so low this time of year. He also commented that according to the 1990 USGS study, there is a direct correlation between the groundwater and the Little Lehigh that if the Authority is taking water out of Well #8, it will affect the creek. He recommends the Authority close Well #8 off totally and allow the Department of Environmental Protection to put the Little Lehigh Creek on its critically endangered watershed list. He stated that this action would give the Authority the ability to require more stringent water use restrictions of all users, including manufacturers, during periods of drought.

Election of Officers

Tom Muller, serving as the Nominating Committee, indicated he had polled the Board members to determine what capacity they are willing to serve on the Board. He then offered the following slate of nominations for 2017:

Brian C. Nagle, Chair
Richard H. Bohner, Secretary
Scott Bieber, Vice Chair

Norma A. Cusick, Assistant Secretary
Ted Lyons, Treasurer
Kevin Baker, Assistant Treasurer

Mr. Muller asked if there were any other nominations, which there were not. Norma Cusick made a motion to close the nominations, which was seconded by Linda Rosenfeld. With no additional nominations from the

floor, the nominations were closed and the slate of officers elected by acclamation. The term of the officers elected will begin on March 1, 2017.

ACTION AND DISCUSSION ITEMS

Resolution #2-2017-1 – Connection Fees & Allentown Division Tapping Fees

Resolution #2-2017-1 establishes the various components of certain Lehigh County Authority Capital Recovery Fees for the City Division Wastewater and Water systems as well as connection fees for the all applicable service areas. The Authority is required by the Municipality Authorities Act to adopt, by Resolution, the Connection and Tapping Fees. Dave Bush from Keystone Alliance Consulting was present and reviewed the exhibits attached to the Resolution. Mr. Bush is the Authority's Rate consultant who will also be working on the Suburban Division rate study later in 2017. Liesel Gross was asked to explain tapping fees and how they are calculated, and she provided a brief summary of the process and how tapping fees are applied to new connections to the water or sewer systems so that new customers contribute a fair share toward the cost of the system existing at the time of the connection, in addition to the regular bills issued for services provided after the connection is completed.

On a motion by Norma Cusick, seconded by Linda Rosenfeld, the Board approved Resolution 2-2017-1 (6-0).

MONTHLY FINANCIAL REVIEW

Ed Klein gave an overview of the January 2017 Financial Report. The Report was previously emailed to the Board for their review prior to the meeting.

SYSTEM OPERATIONS OVERVIEW

John Parsons reviewed the January 2017 Operations Report that was attached to the Board agenda. Mr. Parsons noted that well production in the Central Lehigh Division is at 1.60 million gallons per day (mgd) which is well below prior withdrawal rates due to the increase in water being purchased through the system interconnection with Allentown. The Board stated that according to the report, the Authority seems to be drawing much less water than the permitted levels. Liesel Gross noted that while Wells 8 & 12 were permitted for withdrawals up to 2.8 mgd when they were expanded in 2010, these sources are being used at much lower levels, at most times withdrawing less now than they were when they were originally constructed in the 1980s.

STAFF COMMENTS

Liesel Gross informed the Board that Al Guisepppe of Spotts Stevens and McCoy will be present in March to give a report on the water supply monitoring and drought studies.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

EXECUTIVE SESSION

Chair pro tem Bohner called an Executive Session at 12:39 p.m. to discuss two items related to potential litigation.

The Executive Session ended at 1:08 p.m.

ADJOURNMENT

There being no further business, the Chair pro tem adjourned the meeting at 1:08 p.m.

Richard H. Bohner
Secretary



1053 SPRUCE ROAD * P.O. BOX 3348 * ALLENTOWN, PA 18106-0348
610-398-2503 * FAX 610-398-8413 * www.lehighcountyauthority.org
email: service@lehighcountyauthority.org

MEMORANDUM

TO: LCA Board of Directors
FROM: Liesel Gross, CEO
DATE: February 21, 2017
RE: 2017 Goals & Measures

Overview

This memo and accompanying packet of information is intended to provide details of Lehigh County Authority's goal-setting process for 2017 to date. As you will see in the materials provided, this year's process signals a shift from our more traditional annual goal-setting process into a continuous improvement framework that will always be a "work in progress." At our February 27, 2017 Board meeting, I will review the materials in this packet and seek your feedback on the overall direction we have set for ourselves through this process. Discussion about the "Next Steps" section of this memo will also help drive us forward in these areas, or in other directions as needed. I look forward to hearing your feedback!

Background

Over the years, LCA's goal-setting process has evolved in its format and function, but has typically involved a process of outlining a lengthy list of individual goals that managers and employees were responsible for achieving. While managers may have used this process to track individual performance, we have historically struggled to develop a method to bring the goals into a cohesive package that would communicate the organization's overall strategic direction.

In 2016, we embarked upon a new goal-setting process that included establishing a very limited number of strategic goals for the organization to signal the top priorities we would focus on during the course of the year. The four goals we developed in 2016 – in the categories of financial health, asset management, organizational development and environmental/regional leadership – served as the "themes" for the year and were carried forward through many discussion with employees, managers and the Board throughout the year, including in our budget prioritization process for 2017.

While this process was an improvement from prior practice, there is room for additional improvement in the goal-setting process, especially as it relates to tracking ongoing progress, measuring results and setting a longer-term vision for the organization. As we began considering our 2017 goals, the management group sought ways to address these important areas as part of the process. For guidance, we turned to the water / wastewater industry associations, which led us to the Effective Utility Management (EUM) framework that was developed in 2008, and refreshed in 2016, through a partnership of seven well-respected industry organizations including the American Water Works Association and the US Environmental Protection Agency. Using the EUM framework, the LCA staff developed preliminary goals and concepts around measures for 2017, which are included as part of this packet.

Every drop matters. Every customer counts.

More About EUM

Essentially, the EUM framework codifies the common “language” that all water and wastewater utilities speak. While every utility is unique in certain ways relating to organization structure, technology, economic climate, water supply availability, size, age of infrastructure, etc., there are some basic tenets of utility management that are common to all utilities. The EUM framework simplifies utility management into 10 attributes that define what an “Effectively Managed Utility” looks like.

The first attachment to this memo displays a listing of these 10 attributes, followed by a “2nd Generation (2016)” diagram of the EUM framework that includes five “keys to success.” This diagram is intended to illustrate that that 10 attributes and 5 keys to success all work together to ensure the utility is managed effectively.

This simple framework provides a tool for utility managers to assess strengths, weaknesses and priorities in establishing goals. In addition, the EUM toolkit offers approximately 80 industry-accepted measures that utilities could use to track performance in each of the 10 attributes, as appropriate for that utility.

LCA Process Using EUM

In November, the LCA management group conducted a cursory assessment of the organization’s performance across the 10 EUM attributes. This assessment was quite simple in form – composite performance “grades” and rankings were calculated from feedback provided by 30 LCA managers and supervisors.

To develop priorities, we looked for the following:

- Highest ranking (most important) attributes regardless of performance – recognizing that the things that are most important to LCA should always be on the list for continuous improvement.
- Lower ranking (less important) attributes that have the lowest performance grade – recognizing that all 10 attributes are in some way important, we should focus on areas that need to most improvement.

Through this evaluation, and in an effort to keep our goals reasonable/achievable, we selected four of the EUM attributes to focus on:

EUM Attribute	Performance Grade	Rank / Importance
Product Quality	A-	1
Financial Viability	C+	2
Infrastructure Stability	C	3 (5-way tie)
Employee & Leadership Development	C+	3 (5-way tie)

Following this grading and prioritization process, developing the details of what we hope to achieve in each of these four areas came quite easily because they closely mirror the priorities we had established for 2016. The final attachment to this memo provides a more detailed description of LCA’s focus for these four attributes in 2017, including quarterly milestones which can be tracked for achievement.

In addition, to establishing a work plan for each of these areas, each form includes a section at the end entitled “Measures Under Consideration.” These measures are a sampling of items included in the EUM toolkit that relate most closely to LCA’s specific focus for 2017. Further investigation and discussion is required to determine which measures we can implement based on data availability, and we expect to revise these listings accordingly and refine them to a more limited number of measures for each attribute.

Next Steps

Goal-setting is an iterative process. At its most simplistic level, it is important to establish work plans and targets that help the staff to prioritize the work we must accomplish. In its form as presented here, we believe the four goal areas achieve this. That is, if we do nothing more than track progress on our achievement of the quarterly milestones laid out in the attached documents, we will find ourselves in a better place at the end of the year than where we started.

To transform these goals into a living and evolving process of continuous improvement, however, we need to do more. The following next steps are envisioned:

- Refinement of measures for the 4 EUM attributes selected. Establish targets for the measures selected. Use industry best practices / benchmarks where available.
- Development of a visual / simplified monthly report out on goal progress.
- Deeper dive with Board on selected attributes of broader interest (e.g. community sustainability, stakeholder input, etc.)
- Development of a mid-term vision for the organization (LCA 2020) that will guide our planning and budgeting process for the next 3-5 years.
- Continuous refinement and evaluation!

These steps will take some time and resources to achieve, but are achievable with the commitment of the staff and Board to continue this strategy discussion. In addition, an external resource familiar with the EUM framework will be sought to support this effort to ensure that LCA’s efforts align with industry best practices, and to supplement any gaps in our staff’s availability to complete this important work.

Effective Utility Management – Planning Framework - 1st Generation (2008)
Developed by AWWA, USEPA, AMWA, APWA, NACWA, NAWC & WEF

Attribute	Attribute Components
Product Quality (PQ)	<ul style="list-style-type: none"> ❖ Complies with regulatory and reliability requirements. ❖ Consistent with customer, public health, and ecological needs.
Customer Satisfaction (CS)	<ul style="list-style-type: none"> ❖ Provides reliable, responsive, and affordable services. ❖ Receives timely customer feedback. ❖ Responsive to customer needs and emergencies.
Employee and Leadership Development (ED)	<ul style="list-style-type: none"> ❖ Recruits and retains competent workforce. ❖ Collaborative organization dedicated to continual learning and improvement. ❖ Employee institutional knowledge retained and improved. ❖ Opportunities for professional and leadership development. ❖ Integrated and well-coordinated senior leadership team.
Operational Optimization (OO)	<ul style="list-style-type: none"> ❖ Ongoing performance improvements. ❖ Minimizes resource use and loss from day-to-day operations. ❖ Awareness and timely adoption of operational and technology improvements.
Financial Viability (FV)	<ul style="list-style-type: none"> ❖ Understands full life-cycle cost of utility. ❖ Effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. ❖ Predictable and adequate rates.
Infrastructure Stability (IS)	<ul style="list-style-type: none"> ❖ Understands the condition of and costs associated with critical infrastructure assets. ❖ Maintains and enhances assets over the long-term at the lowest possible life-cycle cost and acceptable risk. ❖ Repair efforts are coordinated within the community to minimize disruptions.
Operational Resiliency (OR)	<ul style="list-style-type: none"> ❖ Staff work together to anticipate and avoid problems. ❖ Proactively establishes tolerance levels and effectively manages risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related).
Community Sustainability (SU)	<ul style="list-style-type: none"> ❖ Attentive to impacts on community and watershed health and welfare. ❖ Operations enhance natural environment. ❖ Efficiency use water and energy resources; promote economic vitality; and engender overall community improvement. ❖ Maintain and enhance ecological and community sustainability including pollution prevention, watershed, and source water protection.
Water Resource Adequacy (WA)	<ul style="list-style-type: none"> ❖ Ensures water availability through long-term resource supply and demand analysis, conservation and public education. ❖ Manages operations to provide for long-term aquifer and surface water sustainability and replenishment.
Stakeholder Understanding and Support (SS)	<ul style="list-style-type: none"> ❖ 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.

Effective Utility Management – 10 Attributes & 5 Keys to Success - 2nd Generation (2017)
Developed by AWWA, USEPA, AMWA, APWA, NACWA, NAWC & WEF



2017: LCA Organizational Goals – Product Quality

Attribute Description from Effective Utility Management (EUM) framework:

Produces “fit for purpose” water that meets or exceeds full compliance with regulatory and reliability requirements and consistent with customer, public health, ecological, and economic needs. Products include treated drinking water, treated wastewater effluent, recycled water, stormwater discharge, and recovered resources.

LCA MANAGEMENT GRADE: A- *

* Additional discussion required to validate an overall “A” grade in this area, considering some challenges within LCA’s small water and wastewater systems, and continued region-wide need to address sanitary sewer overflows.

LCA MANAGEMENT RANK (1-10): 1

2017 LCA FOCUS: US EPA Administrative Order / Elimination of Sanitary Sewer Overflows (SSOs)

- Develop measurement / cost-sharing methodology that municipalities agree on with the WLSP through an MOC
- Work with the City to Develop measurement / cost-sharing methodology that City Signatory municipalities agree on through an MOU
- Planning work completed / approved by WLSP/ submitted to EPA by 12/31/2017
- Develop method of measure effectiveness of capital program and ongoing operation and maintenance (CMOM) program
- Plan for 2018 WLI PCA Projects

QUARTERLY MILESTONES:

Timing	Description
2017 – 1 st Quarter	<ul style="list-style-type: none"> • Monthly meetings to negotiate MOU and MOC • Set up rehabilitation effectiveness metering program • Initiate development of CMOM Program
2017 – 2 nd Quarter	<ul style="list-style-type: none"> • Monthly meetings to negotiate MOU and MOC • Meeting with EPA/DEP to present Program concepts • WLSP municipal meeting attendance • Complete CMOM Table of Contents
2017 – 3 rd Quarter	<ul style="list-style-type: none"> • Execute MOC among WLSP • Finalize WLSP Cash Flow Plan • Complete draft <i>SCARP Improvements Implementation Plan</i> • Complete the draft CMOM Program
2017 – 4 th Quarter	<ul style="list-style-type: none"> • Execute MOU with City Signatories • Finalize CMOM Program • Submit <i>SCARP Improvements Implementation Plan to EPA/DEP</i>

Timing	Description
2018 Next Steps	<ul style="list-style-type: none"> • Initiation of CMOM Program • WLI improvements design work • Monitor Signatory improvements progress
Ongoing Steps / Activities	<ul style="list-style-type: none"> • Monthly coordination meetings • Flow Metering • Start step 2

MEASURES UNDER CONSIDERATION:

1. SSOs per 100 miles of gravity sewer vs. length of sewer
2. Stoppages per 100 miles of gravity sewer vs. % system cleaned
3. Dry-weather vs. wet-weather SSOs
4. Regulatory compliance rate – water & sewer

2017: LCA Organizational Goals – Financial Viability

Attribute Description from Effective Utility Management (EUM) framework:

Understands the full life-cycle cost of utility operations and value of water resources. 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, plan and invest for future needs, and taking into account the needs of disadvantaged households. Implements sound strategies for collecting customer payments. Understands the opportunities available to diversify revenues and raise capital through adoption of new financial management models.

LCA MANAGEMENT GRADE: C+

LCA MANAGEMENT RANK (1-10): 2

2017 LCA FOCUS: Achieving Budget and Capital Financing

- Achieve targeted performance included in 2017 budget (see measures under consideration, below)
- Complete new borrowing for known capital needs (Administrative Order / Suburban Water)
 - Suburban Water borrowing requirements - \$5.9m
 - Suburban Wastewater requirements - \$10.875m (AO Requirements)
 - City – no borrowing, using existing project reserves
- Adopt capital financing policy that staff & Board agree on
 - Use of Debt Service and levels
 - Use of Pay-as-you-go via current rates, tapping fees & other contributions
 - Use of Capital Reserves
 - Use of Debt Service Reserves
 - Use of Repair & Replacement Reserves
 - Use of Rate Normalization Reserves
 - Overall impact to user rates to fund all of the above

Note: Current policy with respect to capital funding will be reviewed and revised if needed as part of this process. In addition, to the extent that the new policy differs from current, a multi-year transition strategy may be required.
- Understand and develop strategy to address impact of Allentown Division revenue shortfall

QUARTERLY MILESTONES:

Timing	Description
2017 – 1 st Quarter	<ul style="list-style-type: none">• Financial Review of YTD results through March 2017• Consult with Financial Consultant on available commercial/bond debt options• Consultations on WIFIA options and requirements• Review of current policy and its applicability• Review of available options and selection of best options for Suburban Water and Suburban Wastewater debt• Required submittals for debt• Review of revenue/capital model for policy decisions by Finance Committee• Undertake Suburban Water Rate Study
2017 – 2 nd Quarter	<ul style="list-style-type: none">• Financial Review of YTD results through June 2017• Debt closing for both funds• Recommended policy to Board for Approval & Adoption• Adoption of drafted revenue/capital policy
2017 – 3 rd Quarter	<ul style="list-style-type: none">• Financial Review of YTD results through September 2017• Review of Water Rate Study and recommendations
2017 – 4 th Quarter	<ul style="list-style-type: none">• Financial Review of YTD results through December 2017• 2018 Budget completion• Adoption of rates based upon Water Rate Study• City Financial Model Update

MEASURES UNDER CONSIDERATION:

1. Operating revenues to budget – a comparison of Actual Operating Revenues / Budget Operating Revenues expressed as a %
2. Operating Expenses (excluding depreciation expense) to operating revenue – the operating expense / operating revenue expressed as a %
3. Net Operating Cash After Debt Service % to Operating Revenue – Net Operating Cash calculated by taking operating revenue less: operating expenses (ex. Depreciation) less: debt service payments / operating revenues expressed as a % and compared to budget
4. Non-Operating Revenues % to Capital Spending – total non-operating revenues excluding project reimbursement / total capital spending expressed as a % and compared to budget
5. Debt Service Coverage Ratio – indenture based calculation compared to budget
6. Long-Term Debt to Net Assets % - long-term debt related to bond debt / Net assets which is net working capital plus long-term assets
7. Overall cash / fund balance (annual or total) as compared to target
8. Report out on actual performance related to new capital financing policy / strategy

2017: LCA Organizational Goals – Infrastructure Stability

Attribute Description from Effective Utility Management (EUM) framework:

Understands the condition of and costs associated with critical infrastructure assets. Plans infrastructure investments consistent with anticipated growth, system reliability goals, and relevant community priorities, building in flexibility for evolution in technology and materials, and uncertainty in the overall future operating context (e.g., climate impacts, customer base). 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. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.

LCA MANAGEMENT GRADE: C
LCA MANAGEMENT RANK (1-10): 3 (tied with 5 others)

2017 LCA FOCUS: CityWorks Implementation & Asset Management Strategy Development

- Complete Phase 2 data collection and population of data in CityWorks (LCA’s Computerized Maintenance Management System) for Suburban Division (SD) vertical assets.
- Create SD Preventative Maintenance (PM) program for all major equipment, patterned after AD, and incorporate into CityWorks. This will serve the basis of measuring preventative vs. reactive maintenance going forward.
- Incorporate asset management projects into Capital Plan based on needs assessed in SD mechanical inventory and Allentown Division (AD) water master plan.
- Complete SD Facilities Upgrade Project to address highest risk rated facilities (structural, electrical/code, HVAC), per 2016 facilities condition assessment results.
- Develop strategy to combine/standardize formats of condition assessment and internal asset inventory work completed from different project areas (SD condition assessment vs. AD water master plan and upcoming AD wastewater master plan).

QUARTERLY MILESTONES:

Timing	Description
2017 – 1 st Quarter	<ul style="list-style-type: none"> • Engage consulting services to assist LCA with CityWorks implementation strategy and process • Initiate Phase 2 of data collection and input for Suburban Division (SD) asset inventory in CityWorks. This includes equipment nameplate data, operation and maintenance manuals, shop drawings, as-built plans, repair history, etc. • Initiate creation of PMs for each SD facility major equipment • Complete design of SD Facilities Upgrade Project • Obtain measure of Allentown Division (AD) current % of preventative vs. reactive maintenance for 2016, with monthly benchmarking continuing in 2017

Timing	Description
2017 – 2 nd Quarter	<ul style="list-style-type: none"> • Continue Phase 2 data collection and input for SD asset inventory in CityWorks • Finalize PM program for routine preventative maintenance; input into CityWorks • Collaborate with internal team, including IT group, to determine if additional consulting services are required for CityWorks implementation • Begin construction SD Facilities Upgrade Project
2017 – 3 rd Quarter	<ul style="list-style-type: none"> • Complete Phase 2 data collection and input for SD asset inventory in CityWorks • Begin CityWorks implementation and retraining off SD operations staff • Scope out 2018 SD Mechanical Facilities Upgrade Project and add to Capital Plan • Incorporate AD water master plan results into Capital Plan
2017 – 4 th Quarter	<ul style="list-style-type: none"> • Complete CityWorks staff retraining & implementation • Finish construction of SD Facilities Upgrade Project • Implement benchmarking of % of preventative vs. reactive maintenance for SD; add to AD measure • Identify standardization opportunities in AD and SD asset management programs
2018 Next Steps	<ul style="list-style-type: none"> • Assess improvements needed in preventative vs. reactive maintenance across all of LCA • Implement applicable standardization opportunities between SD and AD related to asset management programs • Scope out 2019 asset management upgrade projects
Ongoing Steps / Activities	<ul style="list-style-type: none"> • Utilize CityWorks in a consistent manner across all of LCA • Incorporate new CIO position into CityWorks implementation process and asset management program standardization

MEASURES UNDER CONSIDERATION:

1. Condition assessment coverage ratio (number of critical assets w/ condition assessed and categorized vs. total number of critical assets)
2. Percentage of preventative vs. reactive maintenance

2017: LCA Organizational Goals – Employee & Leadership Devel.

Attribute Description from Effective Utility Management (EUM) framework:

Recruits and retains a workforce that is competent, motivated, adaptive, and safety-focused. Establishes a participatory, collaborative organization dedicated to continual learning, improvement, and innovation. Ensures employee institutional knowledge is retained, transferred, and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development, taking into account the differing needs and expectations of a multi-generational workforce and for resource recovery facilities. Establishes an integrated and well-coordinated senior leadership team.

LCA MANAGEMENT GRADE: C+

LCA MANAGEMENT RANK (1-10): 3 (tied with 5 others)

2017 LCA FOCUS: Workforce / Succession Planning & Knowledge Loss

- Identify and plan for retirements in the 1-3 year timeframe
- Identify and address roadblocks to successful recruiting new employees & retaining/advancing the skills / responsibilities of existing employees. This focus area includes components of addressing and realigning non-union employee pay scales, developing training & leadership development strategies, addressing generational differences in growing a supportive culture or continuous improvement, and more.
- Leverage technology to address information sharing / training needs of the organization – focusing on issues like document management, IT governance, system integration, etc.

QUARTERLY MILESTONES:

Timing	Description
2017 – 1 st Quarter	<ul style="list-style-type: none"> • Revise retirement risk profile w/ feedback from managers • Seek employee feedback on 2017 goals; process improvement priorities; recruiting strategies (internal & external) • Recruit for 1st priority positions in wastewater operations • Reorganize Information Technology group with new CIO on-boarding process • Develop short-term (2017) IT goals & plans for “quick wins” • Complete compensation study • Develop simplified Leadership Academy concepts / opportunities • Recruit 3-5 new supervisors/managers into Leadership Academy

Timing	Description
2017 – 2 nd Quarter	<ul style="list-style-type: none"> • Management review of compensation study & implementation strategies • Implement 1st priority IT “quick wins” • Develop succession plan for 1st priority positions in retirement risk profile • Kick off 1st process improvement / leadership development team • Develop employee satisfaction survey / kick off at employee meeting
2017 – 3 rd Quarter	<ul style="list-style-type: none"> • Kick off 2nd process improvement / leadership development team • Develop 2018 IT goals for data / knowledge sharing • Distribute 1st round of employee satisfaction surveys • Recruit for 2nd priority positions identified in succession planning efforts • Develop succession plan for 2nd priority positions in retirement risk profile
2017 – 4 th Quarter	<ul style="list-style-type: none"> • Implement 2nd priority IT “quick wins” • Assess budget requirements for implementing additional succession planning steps
2018 Next Steps	<ul style="list-style-type: none"> • Participate in Top Workplaces survey
Ongoing Steps / Activities	<ul style="list-style-type: none"> • Employee satisfaction surveys • Leadership academy participation & growth • Goal-setting & communication

MEASURES UNDER CONSIDERATION:

1. Experience Turnover (Years of Experience Departing / Total Years of Experience in Organization)
2. Succession Plan Coverage (Percentage of High-Retirement-Risk Employees Covered by a Succession Plan)
3. Certification Coverage (Certifications Achieved or Maintained / Number of Certifications Needed)
4. Employee Engagement / Satisfaction (Gallup Q12 Survey or Other?)

Lehigh County Authority

Drought Monitoring Criteria and Little Lehigh Creek Watershed Monitoring

SSM evaluated the various components of the LCA Western Lehigh – Central Division and Allentown Division water system to determine an appropriate Drought Monitoring Criteria to alert of potential drought conditions that may limit LCA’s ability to serve water to its customers. Given the diversity of LCA’s sources, the drought monitoring criteria need to address the various facets of water resources within the Little Lehigh Creek watershed.

Drought Criteria

SSM recommends that three existing monitoring stations be utilized, and drought stages be designed using a methodology similar to that used by the Pennsylvania Department of Environmental Protection. That is, a local / LCA drought stage would be initiated when all three existing monitoring points reach their respective trigger levels. Alternatively, when the state declares an advanced drought stage for Lehigh County, LCA will follow the state’s guidance for that drought stage.

1. Little Lehigh Creek Pass-by Flow

Through monitoring of low-flow conditions at the USGS stream gaging station on the Little Lehigh Creek at the Tenth Street Bridge in Allentown, the condition the total creek flow available to the surface water intake will be assessed. A condition of drought stage is met when the lowest daily mean flow for the past seven days is less than following flows.

Stage I – 64 cubic feet per second

Stage II – 54 cubic feet per second

Stage III – 46 cubic feet per second

2. Upper Macungie Park Quarry

Through monitoring of the quarry pool elevation within the upper quarry in Upper Macungie Township, the condition of the groundwater table in the upper portion of the watershed will be assessed. A condition of drought stage is met when quarry pool is observed to be below the following elevations.

Stage I – 404 feet above mean sea level (14 feet below datum)

Stage II – 396 feet above mean sea level (22 feet below datum)

Stage III – 392 feet above mean sea level (26 feet below datum)

3. Lower Macungie Road Monitoring Well

Through monitoring of the water level within a private well in Lower Macungie Township, the condition of the mid-basin groundwater table will be assessed. A condition of drought stage is met when the monitoring well experiences a daily mean below the following water levels.

Stage I – 39 feet below top of casing

Stage II – 40 feet below top of casing

Stage III – 41 feet below top of casing

Schantz Spring

SSM recommends that a flow monitoring station be constructed to measure the spring flow that bypasses the withdrawal point in order to determine the total discharge from the Schantz Spring. After the station is operational and sufficient high- and low-flow volumes are recorded, the station can be incorporated in the drought monitoring criteria. Because the spring recharge area covers a large portion of the upper basin, this monitoring station has the potential to be a valuable indicator of current and impending drought conditions.

Little Lehigh Creek Watershed Monitoring Plan

SSM proposes the establishment of an ongoing watershed monitoring plan to characterize the condition of the Little Lehigh Creek and to quantify the interaction between surface and ground water. The proposed monitoring plan recommends establishing six additional stream gages along the main stem of the Little Lehigh Creek and three additional groundwater monitoring wells within a quarter mile of the Little Lehigh Creek.

Additional Stream Flow Monitoring Points

Route 100 bridge
Mill Creek Road bridge
Wild Cherry Lane bridge
Macungie Road bridge
Riverbend Road bridge
Fish Hatchery Road bridge

Additional Groundwater Monitoring Wells

1905 Pembroke Drive
1965 Route 100
4958 Wild Cherry Lane

The plan recommends enlisting the assistance of volunteers and citizen scientists from programs and organizations such as the local Master Watershed Steward Program or Wildlands Conservancy for implementation of the monitoring plan. Armed with data collected through this watershed monitoring plan, SSM expects to be able to answer fundamental questions regarding the Little Lehigh Creek.

Why do sections of the stream go completely dry?

Where does the lost stream flow go?

Does nearby groundwater extraction contribute to the streamflow losses?

What can be done to mitigate the risk of drying streams?

FINANCE & ADMINISTRATION

ACTION ITEMS

DISCUSSION ITEMS

1. **2017 Goals – March 13, 2017**

The Authority’s management staff has developed goal statements and work plans for 2017, which will be presented to the Board for discussion.

INFORMATION ITEMS

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

CERTIFICATES OF DEPOSIT

Fund	Bank	Location	Gross Amount	Date of Purchase	Date Due	Net Rate %
WW Capac	Rollstone Bank & Trust	Fitchburg, MA	125,000.00	3/1/17	3/1/19	1.4
LLRI CR	Rollstone Bank & Trust	Fitchburg, MA	125,000.00	3/1/17	3/1/19	1.4

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

1. **Suburban Division Hydrant & Valve Exercising Program – March 27, 2017**

The project includes operation and maintenance of 5,666 water distribution valves and 1,515 fire hydrants within a three year contract. The assets are exclusively part of the Central Lehigh System. GPS positions will be recorded for every asset and adjustments in the LCA GIS system will be made accordingly. Extensive asset data will be recorded in the field and the contractor will be required to provide import files to migrate the data into LCA's Maintenance Management System. Proposals were due on 3/3/2017. Approval for the contract award will be requested at the March 27, 2017 Board Meeting. The project will be funded by the LCA Suburban Division.

DISCUSSION ITEMS

1. **Drought and Water Supply Monitoring Program – March 13, 2017**

Al Guisepppe of Spotts, Stevens and McCoy has prepared reports for the Watershed Monitoring Program and the Drought Trigger Criteria as had been discussed at previous Board meetings. Mr. Guisepppe will attend the March 13, 2017 Board Meeting to present both reports to the Board, a summary of which will be attached to the Board agenda. The projects are aimed at finalizing the LCA Drought Contingency Plan in addition to getting a better understanding of the local groundwater flows and also the Little Lehigh Watershed in general.

INFORMATION ITEMS

1. **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. **(No Change)**

2. **Allentown Division – Water Main Replacement Program- Cycle 3**

The project is the replacement of 4.39 miles of aged and/or failing Cast Iron water main in multiple locations throughout the City. The Construction phase was approved at the 4/11/16 Board meeting. JOAO & Bradley, Inc. our contractor has completed construction according to schedule and are currently in discussion with LCA for project documentation closeout and billing. This Project is identified as Schedule-7 Work and will be funded by LCA Allentown Division. **(No Change)**

3. **Allentown Division - Water Filtration Plant / Water Distribution: Flood Pump Replacement**

Upgrades to the existing stormwater pump/control for the WFP and D&C parking lot are needed due to equipment age. The existing flood pump (centrifugal) will be replaced with a new submersible flood pump. Miscellaneous electrical upgrades will also occur. In addition, a new raw water magmeter and two new chemical feed tanks will be installed at the Water Filtration Plant. Board Approval was granted at the January 23rd Board Meeting. Construction is expected to begin in April of 2017 and completed by August of 2017. This capital project is funded by the LCA Allentown Division.

4. **Allentown Division – Water System Master Plan**

This project involves the creation of a Master Plan for the Allentown Water Plant, water storage tanks, water storage reservoirs, pressure booster stations, raw water springs, and surface water intakes. The Master Plan will involve several key sections including, but not limited to: full-scale condition assessments, treatment process optimization, and development of short term/long term capital plans. The Master Plan is a requirement included within the City of Allentown lease,

and it also needs to be updated every 5 years throughout the life of the lease. The project kick-off meeting with Arcadis was held on May 4, 2016. Multiple workshops have also been held. Condition Assessments and process control audits/optimizations are nearing completion and short-term and long-term capital plans are being developed. The project is scheduled to be completed early in 2017 and it will be funded by the LCA Allentown Division.

5. **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 Schribers Bridge. This project also includes addressing other leaks that were identified during the SmartBall leak detection work completed by the City of Allentown (COA). Design is currently underway. This Project is identified as Schedule-7 Work and will be funded by LCA Allentown Division. **(No Change)**

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 System to the Upper System. The project will also involve installation of a SCADA system. The Public Water Supply (PWS) permit application package received from our consultant was reviewed and comments returned.

7. **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 design phase is underway. We are reviewing the 100% design plans and specifications. A grant application for the construction costs has been submitted to the Commonwealth Finance Authority (CFA). Bidding and construction of the project will be delayed until after grant awards are announced, which is expected to be March 2017. **(No Change)**

8. **Suburban Division – Route 309 Crossing at Sand Spring Road**

A 12" water line will cross Route 309 through a previously installed 24" casing. Completion of this line will bring public water to the property line of Lehigh Carbon Community College. The design phase is under way. PennDOT Highway Occupancy Permits have been obtained. An easement agreement was sent to LCCC for their signatures. **(No Change)**

9. **Suburban Division – Capece Tract, WL #20 and Res #3 Improvements**

WL #20 will be switched over to a variable frequency drive motor to better control power usage and maintain steady output. Reservoir #3 will receive a motor activated control valve to maintain filling capabilities and chlorine contact levels. Both facilities will receive an upgrade to their SCADA systems. The Notice to Proceed has been issued to Blooming Glen Contractors. Construction is underway and is expected to be completed in March 2017 **(No Change)**.

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

Project includes the design and 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. Design and bid phase services

will be performed by D'Huy Engineering. The project is expected to be bid in spring 2017 **(No Change)**.

11. **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 January 4, 2017 Anrich Inc., our contractor has completed all construction related activities associated with the project and will begin the correction of punch list item deficiencies. **(No Change)**

12. **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. We are preparing to make offers to three property owners where easements are needed. Design will commence once the easements are obtained. **(No Change)**

13. **Developments**

Water system construction is occurring in the following developments:

- Grandview, 6 commercial units and 204 apartment units, LMT
- Hidden Meadows, Phase 1B, 72 residential lots (sfa), UMT
- Spring View (Bortz Tract), 14 commercial units, UMT
- Trexler Fields, Phase 2/6/10, 12 residential lots (sfd), UMT
- West Hills Business Center, 2 industrial lots, WeisT, water & sewer

Water system plans are being reviewed for the following developments:

- 67 Werley Road, 112 apartments & clubhouse, UMT
- Ciocca Subaru, 1 additional commercial building at existing business, LMT
- Diocesan Pastoral Center, 2 commercial lots, 3 additional lots and residual lot for existing cemetery, LMT
- Farr Tract, 17 residential lots (sfd), 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
- Kohler Tract, 125 residential lots (sfa), UMiIT, water and sewer
- Lehigh Hills, Lot 2 Pad Sites, 2 commercial lots, UMT
- Lehigh Hills, Lot 5, Phase 1, 273 apartments & clubhouse, UMT
- Mary Ann's Plaza, 1 lot with 12 commercial units, NWT
- Morgan Hills, 40 residential lots (sfd), WeisT, water and sewer
- North Whitehall Commercial Center (Walmart), 5 commercial lots, NWT, water & sewer
- Shepherd's Corner, 1 commercial lot, LMT
- Stone Hill Meadows, 24 residential lots (sfd), LMT
- Trexler Business Center, 1 Commercial Lot with 6 commercial buildings, LMT
- Weilers Road Twins, 82 residential lots (sfa), UMT
- Woodmere Estates, 60 residential units (sfd), UMT

WASTEWATER

ACTION ITEMS

1. **Suburban Division – Western Lehigh Interceptor (WLI) Easement Clearing – March 27, 2017**

Approximately ten (10) miles of WLI easements are overgrown with vegetation to the point that access with any type of vehicle is impossible. Lack of access prevents LCA staff from being able to get equipment to various assets for maintenance activities as well as being unable to get close to the assets should any sort of operational problem develop. A work scope has been prepared for Phase I of the easement clearings in 2017. The scope will include obtaining all required permits and will also include appropriate contacts with all of the affected landowners. The project will be an on-going annual contract until access to the entire WLI has been obtained. Board approval for the contract award will be requested at the March 27, 2017 Board Meeting. The project will be funded by the LCA Suburban Division.

2. **Flow Meter Data Evaluation – March 27, 2017**

A Professional Services Authorization Amendment and a Capital Projects Authorization Amendment will be presented to the Board for Arcadis for flow metering data evaluation including QA/QC, RDII Analysis, and Rehabilitation Effectiveness Evaluation in the amount of \$131,000.

DISCUSSION ITEMS

INFORMATION ITEMS

1. **Allentown Division – Manhole Collars with Water Tight Frame and Covers: Cycle 4**

This project will permanently secure the frame and cover of approximately 15 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. A kick off meeting has occurred with the City. No timetable has been established for construction yet. The project is identified as Administrative Order and will be funded by the City. This will be the final cycle of the project (**No Change**).

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

On 12/20/2016, the drive on Final Settling Tank #5 at Kline's Island WWTP experienced a complete failure. The drive is the original unit that was installed during construction of the clarifier in 1968. Procurement of a replacement drive has a long lead time of 14-17 weeks, which would place installation of the drive on a schedule well into the spring months when peak flows are often experienced and all tanks and drives must be fully operational. An emergency declaration allows staff to reduce this installation time by several weeks. A request for a retroactive emergency declaration was requested at the January 9, 2017 Board meeting. This capital project is funded by the LCA Allentown Division.

3. **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 with construction expected to be completed by early February 2017. The new Primary No. 1 Digester is expected to be installed

by October 2017. This Project is identified in the Lease as a Schedule 7 (required) project and will be funded by the LCA Allentown Division.

4. **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 23rd Board Meeting. Approval of the remaining work will be requested at the February 2017 Board Meeting. Construction of the project is expected to begin in May of 2017. This Project is identified as an Uncompleted Work (UW) in the Lease Agreement and will be funded by the City of Allentown.

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

This portion of the Phase 1 Administrative Order project will develop conceptual designs for the blending and flow equalization alternatives at the wastewater treatment plant. This conceptual design concept has been approved by the City. The City has directed LCA to proceed with these alternatives pending a final determination in late May of 2017. Board approval has been approved for the development of this conceptual design (later to be included in the RFP for full design services). Board approval for the full engineering design phase of the project will be requested at the June 2017 Board Meeting. The project is identified as Administrative Order Work and will be funded by the City. Construction is expected to begin in late 2018 and is expected to be complete in late 2020.

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

This project involves the following upgrades to the existing pumping station: Evaluate the feasibility of installing 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. The project has been identified as a Major Capital Improvement (MCI). The project is currently in design phase, and should be ready for bidding by Summer 2017. **(No Change)**

7. **Suburban Division – Western Weisenberg Wastewater Treatment Plant Improvements**

This project includes the improvements necessary to rectify the cold weather nitrification issue at the WWTP. This project will be funded by the LCA Suburban Western Weisenberg Division. The Board approved the construction phase of the project at the May 9, 2016 meeting. Work started in October 2016. The winterization project is substantially complete and all upgrade work is operational. The Contractor will address punchlist items for final completion in January 2017 **(No Change)**.

8. **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 Spring 2017. **(No Change)**

9. **Suburban Division – Test & Seal Project, Wynnewood Terrace**

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 the Wynnewood Terrace development in North Whitehall Township, previously identified as areas subject to leakage. This project is part of the single contract Test & Seal project. Construction began in August 2016 and is expected to finish by early 2017. **(No Change)**

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

This project will upgrade the wastewater treatment plant (WWTP) headworks. The project is being funded by the Lynn Township Suburban Division. A Notice of Intent to Award was sent to the contractor and work will commence in Winter 2017. **(No Change)**

11. **Suburban Division – SCARP**

Monthly meetings with the LCA Suburban Division Signatories began in January to negotiate a Memo of Cooperation for completion of the SCARP Capital Improvements Plan. Cash flow plans prepared by the Program Consultant have been presented to the Signatories so they can begin analyzing their borrowing needs and schedule. A communications plan has been developed to help the Signatories with discussions with their Boards and the public. The LCA AO Program Consultant will be making a presentation at both LMT and Macungie Borough at their request. Meetings are also taking place monthly with the City Signatories in preparation for signing a Memo of Understanding. **(No Change)**