



BOARD MEETING AGENDA – January 14, 2019

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

- *December 10, 2018 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *Real Property Transaction – Resolution No. 1-2019-1 (Approval) (blue)*
- *LCA 2020 Action Plan & Update (Discussion)*

WATER

WASTEWATER

- *USEPA Administrative Order – Sanitary Sewer Overflows – Update (Discussion) (yellow)*

6. Monthly Project Updates / Information Items (1st Board meeting per month) – **January 2019 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.

January 28, 2019

February 11, 2019

February 25, 2019

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 10, 2018

The Regular Meeting of the Lehigh County Authority was called to order at 12:01 p.m. on Monday, December 10, 2018, Chairman Brian Nagle presiding. Other Members present at the commencement of the meeting were: Linda Rosenfeld, Jeff Morgan, Richard Bohner, Norma Cusick, Ted Lyons, and Deana Zosky. Authority Staff present were Liesel Gross, Brad Landon, Charles Volk, Ed Klein, Pat Mandes, Chris Moughan, 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 changes to the agenda. Under Finance & Administration, the City Division – Monthly Billing Implementation will be moved to Executive Session. Also under Executive Session there will be an item for discussion regarding property acquisition. In addition, the memo regarding the Western Lehigh Interceptor High Flow – Emergency Declaration that was previously emailed to the Board and distributed at the meeting, will be discussed under Wastewater.

APPROVAL OF MINUTES

November 12, 2018 Regular Meeting Minutes

Richard Bohner offered minor grammatical corrections to the minutes. On a motion by Richard Bohner, seconded by Norma Cusick, the Board approved the Minutes of November 12, 2018 meeting as corrected (7-0).

PUBLIC COMMENTS

None.

ACTION AND DISCUSSION ITEMS

2019 Board Meeting Schedule

The proposed Board meeting schedule for 2019 was presented for Board approval so the schedule can be advertised and posted to the Authority's website.

On a motion by Ted Lyons, seconded by Linda Rosenfeld, the Board approved the 2019 Board Meeting Schedule as presented (7-0).

Western Lehigh Interceptor High Flow – Emergency Declaration Memorandum

Liesel Gross introduced Jim Shelton from Arcadis and Diana Heimbach, Plant Manager of the pre-treatment plant to assist with the discussion regarding the sanitary sewer overflow conditions in the Western Lehigh sewer service area that have recently occurred and the action taken to investigate the condition of the line that may be contributing to the high flows during extreme wet weather.

Scott Bieber entered the meeting at 12:12 p.m.

Liesel Gross reported that an internal team was created, meeting daily to develop a plan to investigate the condition of the Western Lehigh Interceptor and options for repairing any damage that is discovered. The biggest challenge has been to determine a method to inspect the system when the interceptor is completely full.

Kevin Baker entered the meeting at 12:20 p.m.

The team has developed a method that has been effective, using the Flow Equalization Basin (FEB), which holds 3.3 million gallons, at the pretreatment plant to hold back flows from the system, which allows the water levels in the interceptor to drop low enough so that inspection and televising crews can inspect the lines. Over the past two weeks, the emergency operations crews performed work running north to south from the pretreatment plant to Trexlertown. Several joint leaks and some debris were found along with silt and sediment in the pipes, however the interceptor is in very good condition overall. The next step is to check the lines from Trexlertown to the Spring Creek area. Upper Macungie Township has assisted with flushing key lines that were suspected of being partially blocked.

Scott Bieber asked if additional FEB would work for short term relief. Jim Shelton from Arcadis said that in the short term this is a viable option, but should not be the normal operation because the FEB needs to be available for its intended use during wet-weather events. Source reduction work coupled with conveyance projects and the regional conveyance work is needed to eliminate the overflows caused by excessive inflow and infiltration issues. This work is described in more detail in the Regional Flow Management Strategy that was submitted to the Environmental Protection Agency and Pa. Department of Environmental Protection (DEP) in August.

Ms. Gross reported that Authority staff met with DEP the previous week to discuss the problems described in this emergency declaration and also tour the impacted area. The Authority has asked DEP to review its strategy to investigate the problem and provide recommendations.

Ms. Gross explained the emergency operation has been successful thus far as leaks are very easily identified during this period of very high groundwater conditions. Under normal, dry conditions, the leaks are very difficult to identify and require a comprehensive "test and seal" process, which is expensive and time consuming to complete. Test and seal work was included in the 2019 capital budget but will not be needed if the investigation and repair work can be completed under this emergency declaration.

Board discussion followed regarding the scope of the emergency declaration, and the need to investigate the condition of the interceptor through the whole system, including downstream of the Spring Creek Pump Station.

On a motion by Linda Rosenfeld, seconded by Norma Cusick, the Board approved the Western Lehigh Interceptor High Flow Emergency Declaration described in the memo, retroactive to November 28, 2018, and covering emergency inspection of the interceptor and rehabilitation of pipe defects discovered through the process (9-0).

Sanitary Sewer System Flow Metering for WLI

Pat Mandes recommended approval for two Professional Services Authorizations (PSAs) related to the Western Lehigh Interceptor System for the 2019 flow metering project, which will generate the data needed to recalibrate the flow model for design of additional conveyance capacity projects and evaluate the effectiveness of the source removal work completed to date. The PSA to TFE Resources, in the amount not to exceed \$350,000.00, is for installation of the temporary flow meters and ongoing data collection services during the scope of the nine-month project. The PSA to Arcadis

in the amount of \$89,000.00, is for quality control of the flow meter data collected by TFE Resources. Jim Shelton explained that the objective is to ensure the data is accurate since this data will then be used to recalibrate the hydraulic model.

On a motion by Scott Bieber, seconded by Jeff Morgan, the Board approved the Professional Services Authorization in the amount of \$350,000.00 to TFE Resources and the Professional Services Authorization in the amount of \$89,000.00 to Arcadis (9-0).

MONTHLY PROJECT UPDATES / INFORMATION ITEMS

Liesel Gross reviewed the December 2018 project update report that was sent out with the Board packet and highlighted some items for discussion coming up in January 2019. Ms. Gross noted that the Preliminary 2020-2024 Capital Plans will be on the January 28, 2019 agenda for discussion and asked the Board if they would prefer to discuss all three plans at one meeting or spread out over a few meetings. The Board preferred to discuss the City plan at a meeting separately from a meeting to discuss the two Suburban plans.

The Monthly Financial Review and the Monthly System Operations Overview reports for November 2018 will be provided to the Board and published on the website sometime during the week of December 17, 2018.

STAFF COMMENTS

None.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

Chairman Nagle called a recess at 1:14 p.m. The meeting reconvened at 1:23 p.m.

EXECUTIVE SESSION

An Executive Session was held at 1:23 p.m. to discuss matters of real estate acquisition and potential litigation.

The Executive Session ended at 1:55 p.m.

The Regular meeting was reconvened at 1:55 p.m. at which time the Board approved Resolution No. 12-2018-1 which authorizes the filing of a declaration of taking and all necessary action for the condemnation of a parcel of land owned by Louise W. Kern for the purpose of constructing a water pumping station and appurtenant facilities.

On a motion by Linda Rosenfeld, seconded by Norma Cusick, the Board approved Resolution No. 12-2018-1 (9-0).

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 1:56 p.m.

Richard H. Bohner
Secretary

RESOLUTION No. 1-2019-1

(Duly adopted 14 January 2019)

A RESOLUTION AUTHORIZING EXCHANGE OF PARCELS OF LAND ADJOINING THE WASTEWATER PRETREATMENT PLANT PROPERTY IN UPPER MACUNGIE TOWNSHIP

WHEREAS, the Lehigh County Authority (the "Authority") is the owner of a 13.5± acres parcel of real property with no address but fronting PA Route 100, Upper Macungie Township and Lehigh County Parcel Identification Number (PIN) of 546534441720-1 ("Parcel 2") that adjoins its property on which is located its wastewater pretreatment plant (the "PTP Parcel"); and

WHEREAS, Landston Equities, LLC, a Pennsylvania limited liability company ("Landston"), is the owner of a 21.2± acres parcel of real property with an address of 7533 Ruppsville Road, Upper Macungie Township and PIN of 546544071268-1 ("Parcel 1") that adjoins the PTP Parcel and Parcel 2; and

WHEREAS, the Authority and Landston wish to exchange their properties since each property is uniquely more beneficial to the other owner for its future uses and have been appraised at similar values; and

NOW THEREFORE, it shall be resolved that:

1. The Authority is hereby authorized to take all actions necessary and convenient to convey title and transfer Parcel 2 to Landston under such terms and conditions as deemed to be in the best interest of the Authority and in accordance with the Land Exchange Agreement dated 3 April 2018, as amended.

2. The Chief Executive Officer, Chief Financial Officer and/or Chief Capital Works Officer of the Authority (the "Official" or "Officials") are hereby authorized, empowered and directed to take all such further action and execute the Deed and such additional documents and certificates, in the name and on behalf of the Authority, as that Official believes are appropriate and in the best interest of the Authority, and to take any and all other actions relative to the transfer of the Property as they may deem necessary and proper to carry out the purposes of this Resolution. The Solicitor or Human Resources Manager is authorized to attest to their signatures.

3. All additional agreements and documents entered into by the Officials in connection with the transfer of the Property are considered to be in the best interest of the Authority and all related actions are hereby ratified, affirmed and approved.

On motion of _____, seconded by _____, this Resolution was adopted the 14th day of January 2019.

☞ ☞

I, Bradford E. Landon, Solicitor of Lehigh County Authority, do hereby certify that the foregoing is a true, correct and complete copy of a resolution which was duly adopted by the Authority at a public meeting of the Authority held on 14 January 2019, after notice thereof had been duly given as required by law, at which meeting a quorum was present and voting and which resolution No. 1-2019-1 is now in full force and effect on the date of this certification.

Bradford E. Landon, Solicitor



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MEMORANDUM

TO: LCA Board of Directors
FROM: Liesel Gross, CEO
DATE: January 7, 2019
RE: LCA 2020: Strategic Goals & 3-Year Action Plan

Attachments: 2018 Action Plan – Year-End Status Report
LCA 2020: Action Plan for 2019-2020

Over the past two years, Lehigh County Authority staff have developed an updated goal-setting strategy that included the following elements:

- Alignment with the Effective Utility Management (EUM) framework established by the American Water Works Association (AWWA), US Environmental Protection Agency and other water industry organizations
- Key performance indicators selected from the AWWA Benchmarking program
- Three-year action plans for the four primary EUM attributes selected for Lehigh County Authority's strategic goals (rolled out in early 2018 as our "LCA 2020" plan)

The purpose of developing the three-year action plans, versus LCA's more traditional annual goal-setting approach, is to provide for somewhat longer-term focus on the overarching strategic goals and key performance indicators that are most important for LCA's overall organizational performance. These action plans can then be used to establish operational priorities, inform our budgeting process, and provide structure for reporting on key achievements as we move forward.

The four goal areas LCA has selected to focus on within the LCA 2020 timeframe are:

1. Product Quality
2. Financial Viability
3. Infrastructure Stability
4. Employee & Leadership Development

Attached to memo is a year-end status update on the specific actions planned in each of these areas for 2018. The "2018 Status" of the report indicates items that are completed or that require a schedule adjustment, and notes are indicated to describe more about the status of each item. We have also attached an updated LCA 2020 Action plan for the remaining years of the plan (2019-2020) to guide our work in the year ahead.

While the action items are fairly detailed and operational in nature, when taken in context of the overarching strategic goals for the organization, we can see the pathway for improvement. The LCA

Every drop matters. Every customer counts.

2020 vision continues to be focused on the most important initiatives for our organization's success, including the following critical elements:

- Resolution to outstanding legal and financial matters related to the Allentown Water/Sewer Lease
- Elimination of sanitary sewer overflows and addressing long-term sewage capacity needs for our region
- Organization-wide focus on consistent asset management and preventive maintenance strategies to ensure system sustainability
- Dedicated efforts to develop and maintain a highly engaged and skilled workforce

At our January 14, 2018 LCA Board meeting, we will review the work we have completed in these areas in 2018 and any barriers to success we have encountered, and lay out the action plan for 2019 to help keep all LCA resources aligned on our vision and mission and goals for the year ahead.

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2018 Status	2018 Owner	Notes
Product Quality							
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.	Complete AO project planning w/ WLI signatories, City and City signatories (dependent upon regulatory feedback & municipal cooperation) – <i>CM</i>	1 - Complete	Pat M	Regional Flow Management Strategy submitted to EPA / DEP on 8/1/18. Awaiting regulatory feedback.
				LCA Suburban systems CMOM program – finalize and input into CityWorks – <i>OPS / IT</i>	1 - Complete	Chris M	Completed with Regional Flow Management Strategy
				City Division CMOM review – align with Operating Standards & existing process for identifying / tracking trouble spots – <i>OPS</i>	1 - Complete	John P	Completed with Regional Flow Management Strategy
				Investigate & develop Fats, Oils & Grease (FOG) program – City Division – <i>CM</i>	1 - Complete	Pat M	Program developed - requires staff discussion of implementation planning & staffing requirements
				Kick off PPS & force main rehab projects – <i>CW</i>	4 - Schedule / Scope Adjustment Required	Chuck V	Force main evaluation delayed due to 2018 wet weather
				Develop updated connection / planning module approval method for City & Suburban – <i>CW / CM</i>	4 - Schedule / Scope Adjustment Required	Chuck V/Pat M	Contingent upon discussion with DEP after AO plan submission 8/1/18. No regulatory feedback received to date (12/18/2018)
				Complete "rebaseline" of WLI communities' allocation – <i>CM</i>	4 - Schedule / Scope Adjustment Required	Pat M	Initial review of per-EDU allocations complete. Other adjustments to be reviewed in 2019.
				City AO projects TBD – <i>CW</i>	5 - No action taken / needed	Pat M/Chuck V	City has determined no additional work will be completed prior to EPA review of AO plan submission (plan submitted 8/1/18, no regulatory action/decision provided through 12/31/2018)

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2018 Status	2018 Owner	Notes
Financial Viability							
Financial policies, debt structure, 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	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.	Debt Service Coverage Ratio	Overall budget process improvement initiative – ALL	1 - Complete	Ed K	Some streamlining and team learning achieved via process mapping. No overarching changes made, pending overall accounting / process alignment, Adaptive Insights implementation, and Internal Service review as noted below.
				Adaptive Insights implemented – FN	4 - Schedule / Scope Adjustment Required	Ed K	Review and revision to accounting policies and practices required prior to completing this implementation.
				Revised forecasting & reporting tools – ALL	4 - Schedule / Scope Adjustment Required	Ed K	Relies upon implementation of Adaptive Insights.
				Capital plan development process improvement & budget schedule alignment – CW / FN (crosses with Infrastructure Stability goal)	1 - Complete	Chuck V / Ed K	New planning schedule developed in July 2018 to focus on Capital Plan as a forecasting tool that precedes annual budgeting process.
		Division-specific evaluations, goals and plans are needed to address different needs of each “fund”	Internal vs. External Funding for Capital Projects	Develop enhanced capital improvements prioritization methodology – ALL	4 - Schedule / Scope Adjustment Required	Chuck V	With Capital Plan schedule moving to the beginning of the year, this initiative will be restarted at that time.
				Suburban water budget 5-year expense forecast based on O&M targets – OPS	1 - Complete	John P	Results included in Suburban water rate study.
				Internal services budget review & process improvement – FN	4 - Schedule / Scope Adjustment Required	Ed K	General discussion started, but need more work to define goals of this effort. Could focus on rising expense trends, but also want to look at allocation method to operating budgets, along with streamlining payroll system. This is a very large effort with organization-wide tentacles!
				Completion of 2019-2022 Suburban water rate study – FN	1 - Complete	Ed K	Completed with 2019 budget process.
				City Division financial evaluation & options analysis for improved financial performance – ALL	1 - Complete	Ed K	Completed and presented to Board by Jacobs Engineering
				Financial policy & strategy documentation – ALL	4 - Schedule / Scope Adjustment Required	Ed K	This effort is interwoven with other portions of this goal area including Adaptive Insights implementation, forecasting / reporting tools, future capex financing decision-making and strategy. Will become a key deliverable of the CFO and Controller in 2019.
Future capex financing plan for all divisions – FN	4 - Schedule / Scope Adjustment Required	Ed K	To be addressed in 2019 planning cycle, adjusted as noted above.				

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2018 Status	2018 Owner	Notes
Infrastructure Stability							
Asset Management Program Development	Planned approach to assessing risk and planning projects and preventive maintenance strategies on a life-cycle cost basis.	LCA's asset management approach is currently inconsistent and not well defined, but systems are aging and require increasing investment to repair and replace critical assets. Methods to plan and prioritize our work is a growing need.	Asset Condition Assessment Completion – Number / ratio of critical assets with condition assessed and categorized.	CMMS Implementation – 2018 Milestones – <i>IT</i>	1 - Complete	Chris M	All 2018 CMMS implementation milestones completed including developing work order templates for corrective and preventive maintenance, incorporating sewer CCTV work and CMOM programs in CMMS. Next year's milestones identified to continue implementation plan.
				Convert 3 Suburban stations from Telog to SCADA – <i>IT</i>	4 - Schedule / Scope Adjustment Required	Chris M	Minor project delays - will be complete April 1, 2019.
				Suburban asset condition assessment – mechanical focus (structural & electrical completed in 2016) – <i>CW / OPS</i>	1 - Complete	Chuck V / John P	Mechanical condition assessment completed; project construction also kicked off and will be completed in 2019.
				Allentown wastewater treatment plant master plan developed – <i>OPS</i>	4 - Schedule / Scope Adjustment Required	John P	To be completed in January 2019.
				Park Pump Station rehab construction under way – <i>CW</i>	1 - Complete	Chuck V	Construction is on schedule. Project will be completed mid-2019.
				Park Pump Station force main evaluation & rehab plan – <i>CW</i>	4 - Schedule / Scope Adjustment Required	Chuck V	Wet weather in 2018 prevented evaluation of force main. Will delay to 2019.
				Review / update / align LCA rules & regs for water / sewer service and City ordinances – <i>ALL</i>	4 - Schedule / Scope Adjustment Required	LMG: Brad	Internal team assembled to review, but progress has slowed due to competing priorities. Will renew effort in 2019.
				Capital plan development process improvement & budget schedule alignment – <i>CW / FN (crosses with Financial Viability goal)</i>	1 - Complete	Chuck V / Ed K	See notes in Financial Viability section.
Preventive Maintenance Program Development	Applying consistent and measured approach to maintaining assets on a planned / preventive basis, to reduce reactive and emergency-based repairs.	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	Planned Maintenance Ratio -- Planned maintenance as a percentage of all maintenance activities completed	CMMS Implementation – 2018 Milestones – <i>IT</i>	1 - Complete	Chris M	See notes for this item in Asset Management section.
				Investigate & develop Fats, Oils & Grease (FOG) program – City Division – <i>CM (crosses with Product Quality goal)</i>	1 - Complete	Pat M	See notes in Product Quality section.
				Phase 2 Interceptor easement clearing program – <i>OPS</i>	1 - Complete	John P	Phase 3 work identified for 2019.
				Phase 2 flushing, valve & hydrant program – Suburban – <i>OPS</i>	4 - Schedule / Scope Adjustment Required	John P	Valve and hydrant work planned for 2018 is complete. Flushing program on hold for 2019 due to staffing availability and operational emergencies.
				Develop measure for preventive vs. reactive maintenance – Phase 1 – multiple measures – <i>IT</i>	1 - Complete	Chris M	Included in dashboard.

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan	2018 Status	2018 Owner	Notes
Employee/Leadership Development							
Knowledge Management / Succession Planning	LCA's ability to move through personnel transitions within limited downtime in productivity or knowledge loss is critical to maintaining the pace of business and stature in the industry / region.	LCA employees who are new to the organization, or new in their roles as managers/leaders, require training and support to be effective in their jobs.	Training & Knowledge Management Coverage – Ratio of "high risk" employees for which a KM / Succession plan has been developed	Update LCA retirement risk profile – <i>ALL</i>	1 - Complete	Liesel G / Kathy M	Completed July 2018.
				Complete treatment plant O&M staff realignment – <i>OPS</i>	1 - Complete	John P	Staff restructuring completed. Additional work required on knowledge transfer / technical & management training. Also, two vacancies remain to be filled in the new structure, which will be addressed in 2019.
				Identify next area of focus for succession planning & develop the plan – <i>ALL</i>	1 - Complete	Liesel G / Kathy M	Three critical needs identified: -Individualized plans for 2 key retirements -Suburban Operations leadership -Other key employees w/ minimal backup (need emergency succession plan)
				Conduct targeted employee focus groups to determine barriers to full engagement – <i>ALL</i>	4 - Schedule / Scope Adjustment Required	Liesel G / Kathy M	Top Workplaces survey provided detailed feedback for future focus group discussions. Delayed to 2019.
Technical & Leadership Training for LCA Employees / Managers	High rates of employee turnover due to retirements results in many employees in new positions who need to develop expertise and skills to be effective in their new roles. Focus is on technical (water/sewer system operations and maintenance) and leadership skills, as the two areas identified as requiring significant attention to address existing gaps.	Loss of institutional knowledge has already impacted LCA operations as new employees need to learn undocumented LCA processes from scratch. As employees retire from LCA with greater frequency, the importance of planning in advance for those transitions is becoming increasingly urgent.	Training Hours per Employee	Complete foundations of leadership training program for all managers – <i>ALL</i>	1 - Complete	Liesel G / Kathy M	Training completed in August 2018. Evaluation & next steps to be determined for 2019.
			Leadership / Technical Training programs offered	Offer at least 4 leadership "practice" opportunities to new / junior managers (Board presentations, team leadership, external networking, etc.) – <i>ALL</i>	4 - Schedule / Scope Adjustment Required	Liesel G / Kathy M	Two individual leadership development / mentoring opportunities pursued in 2018. Shift in focus for 2019 into mentoring / coaching for new managers.
				Conduct 2 nd round of train-the-trainer course – <i>ALL</i>	5 - No action taken / needed	Liesel G / Kathy M	Must identify a new trainer for this program and determine if 1st round of training was effective & being used.
				Implement "lunch & learn" program for training topics of general interest to all employees (IT, CS, Safety) – <i>IT/CS/RM</i>	1 - Complete	Chris M / Sue S	Three "lunch and learn" sessions held in 2018. LinkedIn Learning, ThinkHR and other opportunities rolling out in 2019.

LCA 2020: Strategic Goals & 3-Year Action Plan

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan (see 2018 year-end status report)	2019 Action Plan	2020 Action Plan
Product Quality						
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 & municipal cooperation) – <i>CM</i></p> <p>LCA Suburban systems CMOM program – finalize and input into CityWorks – <i>OPS / IT</i></p> <p>City Division CMOM review – align with Operating Standards & existing process for identifying / tracking trouble spots – <i>OPS</i></p> <p>Investigate & develop Fats, Oils & Grease (FOG) program – City Division – <i>CM</i></p> <p>Kick off PPS & force main rehab projects – <i>CW</i></p> <p>Develop updated connection / planning module approval method for City & Suburban – <i>CW / CM</i></p> <p>Complete “rebaseline” of WLI communities’ allocation – <i>CM</i></p> <p>City AO projects TBD – <i>CW</i></p>	<p>Complete WLI emergency rehab program – <i>OPS</i></p> <p>WLI system flow metering & modeling – <i>CM</i></p> <p>Analyze & decide path forward on WLI conveyance projects – <i>CM / CW</i></p> <p>Evaluate need for Act 537 reopener / KITP expansion – <i>CM / CW</i></p> <p>Evaluate need for updated allocation / planning module approval method for City & Suburban – <i>CW / CM</i></p> <p>Complete PPS rehab project & force main evaluation – <i>CW</i></p> <p>Implement FOG program – <i>CM</i></p> <p>Develop public education for FOG program & removal of clearwater connections – <i>CC</i></p> <p>All CMOM measures achieved / reported – <i>OPS / IT</i></p> <p>Implement Heidelberg & Lynn Twp corrective action plans – <i>CW / OPS</i></p> <p>City AO projects TBD – <i>CM</i></p>	<p>Kick off PPS force main rehab project – <i>CW</i></p> <p>Develop lateral maintenance & basement inspection programs for Heidelberg, Lynn Twp, UMiT, WT & LT – <i>OPS</i></p> <p>Investigate / design wet-weather operating protocols for upgraded PPS, FEB and SCPS, tied to SCADA & KITP – <i>OPS / IT (crosses w/ Infrastructure Stability goal)</i></p> <p>Investigate alternatives for enhanced H2S management – <i>OPS / CW</i></p> <p>Alignment and documentation of WLI communities’ allocation, billable flows and peak flows. Reopen MOC discussions. – <i>CM</i></p> <p>All CMOM measures achieved / reported – <i>OPS</i></p> <p>City AO projects TBD – <i>CM</i></p>

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan (see 2018 year-end status report)	2019 Action Plan	2020 Action Plan
Financial Viability						
Financial policies, debt structure, 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 – ALL</p> <p>Adaptive Insights implemented – FN</p> <p>Revised forecasting & reporting tools – ALL</p> <p>Capital plan development process improvement & budget schedule alignment – CW / FN (crosses with Infrastructure Stability goal)</p> <p>Develop enhanced capital improvements prioritization methodology – ALL</p> <p>Suburban water budget 5-year expense forecast based on O&M targets – OPS</p> <p>Internal services budget review & process improvement – FN</p> <p>Completion of 2019-2022 Suburban water rate study – FN</p> <p>City Division financial evaluation & options analysis for improved financial performance – ALL</p> <p>Financial policy & strategy documentation – ALL</p> <p>Future capex financing plan for all divisions – FN</p>	<p>Address City Division financial sustainability via monthly billing implementation, lease restructuring, debt restructuring, capex financing, and other available means – ALL</p> <p>Develop future capex financing plan and rate forecast for all divisions – FN</p> <p>Adaptive Insights implemented – FN</p> <p>Develop improved forecasting & reporting tools (revenues, expenses, rates) – FN</p> <p>Revamp accounts payable process – FN</p> <p>Develop enhanced capital improvements prioritization methodology – FN / CW</p> <p>Review & develop strategy for improved allocation and accountabilities within Internal Services budget – FN</p> <p>Documentation of financial processes, policies & strategy – ALL</p> <p>Completion of tapping fee calculations for Suburban water – FN</p> <p>Implement “One LCA” asset / equipment sharing program – FN / OPS</p>	<p>Suburban wastewater budget 5-year expense forecast based on O&M targets – OPS</p> <p>Suburban wastewater common rate evaluation – FN</p> <p>Implement payroll modifications / simplification – ALL</p> <p>Realign Internal Service budget allocations – FN</p> <p>Develop innovation teams focused on exploring process improvement, efficiency, revenue enhancement, etc. – ALL</p> <p>Implement department budget accountabilities & reporting – ALL</p>

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan (see 2018 year-end status report)	2019 Action Plan	2020 Action Plan
Infrastructure Stability						
Asset Management Program Development	Planned approach to assessing risk and planning projects and preventive maintenance strategies on a life-cycle cost basis.	LCA's asset management approach is currently inconsistent and not well defined, but systems are aging and require increasing investment to repair and replace critical assets. Methods to plan and prioritize our work is a growing need.	Asset Condition Assessment Completion – Number / ratio of critical assets with condition assessed and categorized. Asset “Needs Addressed” Coverage – Progress on addressing needs identified via condition assessment work.	CMMS Implementation – 2018 Milestones – <i>IT</i> Convert 3 Suburban stations from Telog to SCADA – <i>IT</i> Suburban asset condition assessment – mechanical focus (structural & electrical completed in 2016) – <i>CW / OPS</i> Allentown wastewater treatment plant master plan developed – <i>OPS</i> Park Pump Station rehab construction under way – <i>CW</i> Park Pump Station force main evaluation & rehab plan – <i>CW</i> Review / update / align LCA rules & regs for water / sewer service and City ordinances – <i>ALL</i> Capital plan development process improvement & budget schedule alignment – <i>CW / FN (crosses with Financial Viability goal)</i>	CMMS Integration – 2019 Milestones – <i>IT</i> Convert 3 Suburban stations from Telog to SCADA – <i>IT</i> Complete 2 nd Suburban asset upgrade project (mechanical focus, started in 2018) & scope out next project based on next tier of high-risk components – <i>CW</i> Incorporate results of Allentown wastewater master plan into capital plan documentation – <i>CW</i> Park Pump Station rehab construction complete – <i>CW</i> Park Pump Station force main evaluation & rehab plan – <i>CW</i> Review / update / align LCA rules & regs for water / sewer service and City ordinances – <i>ALL</i> Complete Wynnewood wastewater plant reconstruction – <i>CW</i>	CMMS Integration – Complete – <i>IT</i> Convert all remaining Suburban stations from Telog to SCADA – <i>IT</i> Complete 3 rd Suburban asset upgrade project (scope to be determined in 2019) – <i>CW</i> Investigate / design wet-weather operating protocols for upgraded PPS, FEB and SCPS, tied to SCADA & KITP – <i>OPS / IT (crosses w/ Product Quality goal)</i> Combine Allentown water & wastewater master plans w/ Suburban condition assessment data into single data base – <i>CW / OPS / IT</i> Update / align standard specs with LCA rules & regs and other municipal ordinances – <i>CW / OPS</i> Complete Sand Spring wastewater plant reconstruction – <i>CW</i>

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan (see 2018 year-end status report)	2019 Action Plan	2020 Action Plan
Infrastructure Stability						
Preventive Maintenance Program Development	Applying consistent and measured approach to maintaining assets on a planned / preventive basis, to reduce reactive and emergency-based repairs.	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	Planned Maintenance Ratio -- Planned maintenance as a percentage of all maintenance activities completed	<p>CMMS Implementation – 2018 Milestones – <i>IT</i></p> <p>Investigate & develop Fats, Oils & Grease (FOG) program – City Division – <i>CM (crosses with Product Quality goal)</i></p> <p>Phase 2 Interceptor easement clearing program – <i>OPS</i></p> <p>Phase 2 flushing, valve & hydrant program – Suburban – <i>OPS</i></p> <p>Develop measure for preventive vs. reactive maintenance – Phase 1 – multiple measures – <i>IT</i></p>	<p>CMMS Integration – 2019 Milestones – <i>IT</i></p> <p>Implement FOG program – <i>CM (crosses with Product Quality goal)</i></p> <p>Phase 3 Interceptor easement clearing program – <i>OPS</i></p> <p>Phase 3 flushing, valve & hydrant program – Suburban – <i>OPS</i></p> <p>Evaluate all preventive maintenance strategies implemented by Allentown and Suburban divisions & develop plan for alignment – <i>OPS</i></p>	<p>CMMS Integration – Complete – <i>IT</i></p> <p>Incorporate route easement maintenance into overall PM program – <i>OPS</i></p> <p>Alignment of Suburban & Allentown preventive maintenance strategies for valves, hydrants, system flushing, etc. – <i>OPS</i></p> <p>Investigate / implement rag reduction / enforcement program – <i>CM</i></p> <p>Develop single organizational measure for preventive vs. reactive maintenance – <i>IT (completed in 2018)</i></p> <p>Conduct gap analysis of current PM program vs. desired future state – <i>CW / OPS</i></p>

Strategic Goal	What it means for LCA	Why is it important?	Measure(s)	2018 Action Plan (see 2018 year-end status report)	2019 Action Plan	2020 Action Plan
Employee/Leadership Development						
<p>Knowledge Management / Succession Planning</p> <p>Technical & Leadership Training for LCA Employees / Managers</p>	<p>LCA's ability to move through personnel transitions within limited downtime in productivity or knowledge loss is critical to maintaining the pace of business and stature in the industry / region.</p> <p>High rates of employee turnover due to retirements results in many employees in new positions who need to develop expertise and skills to be effective in their new roles. Focus is on technical (water/sewer system operations and maintenance) and leadership skills, as the two areas identified as requiring significant attention to address existing gaps.</p>	<p>Loss of institutional knowledge has already impacted LCA operations as new employees need to learn undocumented LCA processes from scratch. As employees retire from LCA with greater frequency, the importance of planning in advance for those transitions is becoming increasingly urgent.</p> <p>LCA employees who are new to the organization, or new in their roles as managers/leaders, require training and support to be effective in their jobs.</p>	<p>Training & Knowledge Management Coverage – Ratio of “high risk” employees for which a KM / Succession plan has been developed</p> <p>Training Hours per Employee</p> <p>Leadership / Technical Training programs offered</p>	<p>Update LCA retirement risk profile – ALL</p> <p>Complete treatment plant O&M staff realignment – OPS</p> <p>Identify next area of focus for succession planning & develop the plan – ALL</p> <p>Conduct targeted employee focus groups to determine barriers to full engagement – ALL</p> <p>Complete foundations of leadership training program for all managers – ALL</p> <p>Offer at least 4 leadership “practice” opportunities to new / junior managers (Board presentations, team leadership, external networking, etc.) – ALL</p> <p>Conduct 2nd round of train-the-trainer course – ALL</p> <p>Implement “lunch & learn” program for training topics of general interest to all employees (IT, CS, Safety) – IT/CS/RM</p>	<p>Develop employee training tracking system for external and internal training and OJT provided, priorities for future training, and job-specific training requirements – HR</p> <p>Develop succession / knowledge retention plan for retirement risks identified in 2018 – ALL</p> <p>Complete job analysis for training requirements for 5 positions – ALL</p> <p>Kick off Document Management assessment – IT</p> <p>Implement “stay interview” technique – ALL</p> <p>Develop mentoring / coaching program for new managers or managers in need of support – ALL</p> <p>Conduct employee-wide survey to compare to 2014 results – ALL (completed in 2018)</p> <p>Conduct targeted employee focus groups to determine barriers to full engagement & explore survey results – ALL</p> <p>Assess gaps in inter-departmental communication & cooperation – ALL</p>	<p>Update LCA retirement risk profile – ALL</p> <p>Identify next area of focus for succession planning & develop the plan – ALL</p> <p>Implement Document Management program (phase 1 if phased) – IT</p> <p>Complete job analysis for training requirements for 10 positions – ALL</p> <p>Assess leadership training needs / refresher course provided if needed – ALL</p> <p>Offer at least 4 leadership “practice” opportunities to new / junior managers (Board presentations, team leadership, external networking, etc.) – ALL</p> <p>Conduct brief employee survey to follow-up on 2018 results – ALL</p> <p>Implement leadership performance management system to include “LCA Manager” job description elements – ALL</p>



MEMORANDUM

TO: LCA Board of Directors
FROM: Liesel Gross, CEO
DATE: January 7, 2019
RE: EPA Administrative Order Update
Response from Pa. Department of Environmental Protection

On August 1, 2018, Lehigh County Authority (LCA) joined the City of Allentown and fourteen other municipalities to submit a Regional Flow Management Strategy (RFMS) to the U.S. Environmental Protection Agency in response to their request for a regional program addressing the requirements of the 2009 Administrative Order (AO) to eliminate sanitary sewer overflows (SSOs). At that time, EPA had indicated the requirements of the AO may be considered as having been met if the RFMS was considered satisfactory, and the region might expect ongoing regulatory oversight to revert to normal procedures in place with the Pa. Department of Environmental Protection (DEP). A copy of the RFMS was issued to DEP in August as well. At the time of this writing, EPA has not responded to the RFMS.

Since August 1, 2018, several significant events have occurred impacting the sewer system:

- While 2017 was a “wet year” and 2018 began with some generally wetter-than-normal weather, conditions worsened significantly beginning with a series of back-to-back storms in August 2018, followed by an extraordinarily rainy several months. In fact, 2018 ended as the third-wettest year on record, narrowly missing the second-wettest-year mark by less than one inch of rain.
- Wet-weather conditions, particularly in August and November, resulted in a series of nearly 20 distinct wet-weather events that burdened the regional sewer system. In some manhole locations, SSOs continued intermittently for days or weeks while the weather pattern persisted.
- As a result of SSOs in the LCA Western Lehigh Interceptor system, and bypasses at the Allentown wastewater treatment plant, LCA received a Notice of Violation from DEP on October 2, 2018 requesting our planned response to correct the SSOs. (The DEP notice and LCA’s response were provided to the Board in November 2018.)

Below is a summary of activities specific to the Western Lehigh Interceptor System to occurred in the second half of 2018:

- In August 2018, LCA began working on an alternatives cost analysis for capital improvements to address conveyance capacity constraints in the Trexlertown area.
- On October 17, 2018, LCA representatives met with DEP to discuss the projects planned for the Trexlertown area, and to discuss the DEP Notice of Violation for the SSOs occurring in the Western Lehigh Interceptor.

- In November 2018, significant additional rainfall once again taxed the regional system, and LCA issued an emergency declaration to expedite identification and repair of defects in the interceptor that may be causing continued high flows. This emergency work will continue in 2019 while high flow conditions persist. (See information provided for the December 10, 2018 Board meeting.)
- Throughout November and December, LCA maintained contact with DEP to keep regulators apprised of our efforts to mitigate the challenges we were facing with high flows especially in the Trexlertown area.
- On December 7, 2018, DEP representatives visited LCA facilities to discuss the wet-weather challenges and LCA's emergency operating protocols, and to tour the facilities impacted by high flows, including the interceptor in the Trexlertown area that is subject to evaluation for significant capital improvement.

On December 26, 2018, LCA and the City of Allentown received the attached letter from an environmental engineer in DEP's Clean Water Program in response to the RFMS submission in August. The letter indicates DEP has conducted a thorough review of the RFMS, including each municipality's plans for system maintenance and removal of inflow and infiltration. The letter acknowledges LCA's active work to address the challenges in our Western Lehigh Interceptor, and also recognizes that LCA's flows represent about 27-30% of the total sewage flow in the regional Kline's Island Sewer System. As a result, DEP's letter implies that the challenges we are facing in Western Lehigh County must be considered as part of the overall regional system needs, and continued collaboration with all municipalities will be required. LCA staff agree on this point!

While no specific direction or directive is given in the letter about the path forward on the AO, and EPA has not provided feedback to date, DEP has asked for a response by March 29, 2019 from all the municipalities. The response will need to include additional details on elements included in the RFMS such as plans for upgrading municipal sewage billing meter accuracy, timeline for flow metering and modeling work, description of system constraints and how anticipated future growth will be addressed via conveyance and treatment capacity projects, and more. Each municipality will need to prepare their own response to the individual questions from DEP related to their maintenance and I&I source reduction plans. LCA expects to meet with the municipalities later this month to review DEP's request for information and develop a joint response.

In parallel with this collaborative work on a joint response to DEP, LCA will be continuing to press forward on an emergency basis on repairs in the Western Lehigh Interceptor, as well as completing initial planning work for conveyance capacity improvements to address system constraints in the Trexlertown area.

This summary has been provided as an update to the LCA Board of Directors, with time for discussion noted on the agenda for our January 14, 2019 meeting.



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

December 21, 2018

Mr. Craig Messinger
Interim Public Works Director
City of Allentown
435 Hamilton Street
Allentown PA 18101

Ms. Liesel M. Gross
Chief Executive Officer
Lehigh County Authority
1053 Spruce Road
PO Box 3348
Allentown PA 18106

RE: Regional Flow Management Strategy
Joint Submission by Kline's Island Sewer System (KISS) Respondents
File Location: Lehigh County Authority, Lehigh County

Dear Mr. Messinger & Ms. Gross:

This letter is a follow-up to Lehigh County Authority's (LCA's) and the City of Allentown's 07/25/2018 letter to Ms. Rebecca Crane / EPA, and LCA's 08/09/2018 letter to Mr. B.R. Patel / DEP. On 10/17/2018, DEP representatives met with LCA representatives at DEP's Northeast Regional Office to review primarily the Regional Flow Management Strategy (RFMS) on behalf of all municipalities named in the USEPA Administrative Orders.

Our comments / concerns follow:

REGIONAL FLOW MANAGEMENT STRATEGY

Kline's Island Sewer System Regional Flow Management Strategy, dated 08/01/2018

The USEPA has identified the following as critical components of the RFMS:

- Collection System Operation and Maintenance
- System Characterization
- Inflow and Infiltration Removal
- Flow Monitoring

Section 3. System Flow Characterization

- (1) Section 3.1 / Past Flow Characterizations indicate that the Kline's Island Sewer System (KISS) Model confirmed that portions of the primary conveyance components had high hydraulic grade

lines in conveying dry-day flows and, accordingly, had limited ability to convey significant peak wet-weather flows. In 2014, the KISS model was created from the WLSP and the Allentown hydraulic models.

- (2) With respect to Section 3.3 / Personal Flow Monitoring, Sewer Billing Meters (SBM), when will your efforts to ensure SBM accuracy, and develop protocols for SBM installation upgrades, data capture, reporting for billing purposes, and for reporting flows during wet weather events be completed? Data capture is extremely important since the flow meters / recorders peg out during heavy rainfall periods.

Also, it is necessary that additional flow monitoring meters be installed at manholes where better flow data is necessary.

- (3) With respect to Section 3.4 / Flow Characterization Updates, about 50% of the flow, that enters the KIWWTP, is uncharacterized. 100% of Allentown's flows are uncharacterized. Allentown contributes about 50% of the flows to the system. The other signatories (not counting Allentown and LCA) contributes about 25% of the flows to the system. LCA / WLSP contributes about 25% of the flows to the system.

The Department needs a firm date when the Flow Characterization Update will be conducted. It is imperative that the prioritized SBM evaluations and upgrades (see Section 3.3) be completed as soon as possible.

The Department requests a firm date when the Flow Characterization Update will begin. The date, no sooner than 2019, is not acceptable. Also, when do you expect that the Flow Characterization Update will be completed?

The Department agrees that the Signatories' SBM need to meet the data quality objectives.

As you know, the Flow Characterization Updates need to be conducted and completed before the sanitary sewer system, including pipe sizing and Pump Station Upgrades, are made.

- (4) With respect to Section 3.5 / Anticipated Growth and Impact on Dry and Wet Weather Flows, sewage growth forecasts (for all areas served by the KISS) cannot be completed until flow metering and modeling are completed.

The Department asks that each municipality predicts the anticipated growth for the next 20 – year period and use this figure as a base line when preparing the next Act 537 Plan Update. The Department also asks that you evaluate available conveyance / treatment capacity with the existing infrastructure, and then plan for providing new / additional conveyance and treatment capacities.

Section 4. Operations and Maintenance Programs

Management, Operations, and Maintenance Program for Sewers - LCA
Appendix A – City Division – Sewer Line Maintenance Department, dated 07/2018

With respect to Section 2.2.2, Legal Authority to Enter Private Laterals (page 2-26), what is LCA's opinion on installing View Ports / Inspection Ports so you can see the amount of wastewater entering the sewer mains from the homes' building sewers?

With respect to Section 3.4.3.3 SOPs, when will SOPs be developed for inspection service that LCA performs?

General Comment – It is understood that the proposed SOP will provide follow-up actions to the Inspection Tasks based on the types of Inspection Findings. The inspection tasks pertain to activities to correct the I/I Problem.

Appendix B – MOM Program for Sewers – LCA, dated 04/2018

With respect to Section 2.3, Sanitary Sewer Lateral Maintenance, what is your opinion on installing View Ports / Inspection Ports?

Appendix C – South Whitehall Township – Sewer Collection System MOM Plan and I/I Source Reduction Plan

With respect to Section 4.C., Service Laterals (page 15), the property owner is responsible for the laterals' repair when the problem is associated with the private portion of the lateral (building sewer). Who is responsible that the repairs are made in a timely manner?

Appendix D – Coplay-Whitehall Sewer Authority (CWSA) Sewage Collection System – MOM Plan and I/I Source Reduction Plan

No comments.

Appendix E – Township of Salisbury, MOM, May 2018

With respect to Section 3.4 Laterals, the staff reviews all the mainline CCTV tapes for lateral issues related to I/I. Have you developed a lateral CCTV inspection project to address and/or repair public laterals?

With respect to Section 3.6 Condition Assessment, do you have a list of repairs, rehabilitation, and/or replacement that need to be made?

With respect to Section 5.4.2 Flow Monitoring, what did the results of the Flow Monitoring show? Any areas with high I/I?

Appendix F – Borough of Emmaus / Sanitary Sewer O & M Plan

Page 8 of 11 – Performance Measurements – Have the performance measurements for the Borough been completed or will they be done at a later date? Is Emmaus meeting flow volumes to meet agreements with Allentown / LCA?

Page 9 of 11 – SCADA System – Is the Borough satisfied with the SCADA System?

Appendix G – Borough of Alburtis Sewer Department – CMOM Program for Sewers

Page 13 – The Collection System Capacity Assurance Program is written in a general manner.

When will the plan be prepared and implemented to model peak flow conditions during wet and dry weather flows? Who will be responsible to ensure that this is done? The Evaluation, Capacity Enhancement Measures, and Plan Updates will need to be written in a more specific manner.

Appendix H – Borough of Macungie, O & M Program for Sewers

No comments.

Appendix I – Upper Macungie Township, MOM, May 2018

With respect to UMT's Sanitary Sewer System Map, Appendix A, no legend was attached to the Map. The Legend should explain the Color Coding and the Manhole Abbreviations.

Appendix J – Lower Macungie Township, MOM, May 2018

With respect to Section 3.5 Laterals, when will the program to develop a program to investigate and rehabilitate laterals within the priority areas be completed?

Appendix K – Hanover Township, Lehigh County MOM, dated 06/2018

With respect to Section 3.5 Lateral Inspection, the DEP recommends that a program be in place to address and/or repair laterals. When will this program become effective?

Section 5. Inflow and Infiltration Source Reduction Programs

Appendix C – South Whitehall Township O & M Plan and I/I Source Reduction Plan June 2018

Are the flows, indicated in Section 2. b. Collection System Details (Page 9), obtained where the flows enter the LCA's Sewer System?

Do your six Meter Station Areas measure flows continuously? Any problems with dry weather and wet weather capacity?

Do any pipes need to be expanded?

Appendix L – City of Allentown – I & I Source Reduction Program

Section 1.0, Collection System Overview (Page 1), indicated 7 City-owned trunk sewers and various flow basins. In 2008, Flow Monitoring was conducted for 90-days at 169 locations. Is there a need to conduct continuous Flow Monitoring at the locations where I/I is high and/or the pipe has limited capacity to handle wastewater flows especially during wet weather?

Do any of the pipes need to be expanded? What are the pipes carrying capacities and present dry and wet weather flows?

Appendix M – SCARP Implementation Outline – Western Lehigh Sewerage Partnership

Section 2 Alternative Analysis Summary

Page 2-11 – The Department agrees that Flow Alternative Analysis (FAA) 10 is acceptable as the preferred alternative.

Section 4. Source Reduction Programs were thorough and listed projects, costs, and dates.

Section 5. Capacity Improvements listed the projects that need to be done, and the associated costs.

Section 6. Flow Characterization updates had a lot of worthwhile information.

Appendix N – Township of Salisbury – Phase 1 Source Reduction Program

The Table, Salisbury Township's Sanitary Sewer System I/I Rehabilitation Work, shows the work that has been done between 2009 and 2017.

Are any of the areas flow monitored continuously to get an idea of how much wastewater is entering the sewer pipes during dry and wet weather periods? Do any of the sewer pipes need to be expanded?

Flow is measured at how many locations as the flow enters the LCA / Allentown sewer system?

Appendix O – Borough of Emmaus – I/I Source Reduction Program

The Flow Characterization Section stated that Emmaus has 4 permanent sewer meter stations. Do any of these stations continuously measure flow as it enters the LCA / Allentown system?

Where are the other 3 sewer meter stations located?

Do any of Emmaus sewer pipes need to be expanded?

As stated on Page 6 of 6 / Upstream Watershed Management, 2 of the out-of-Borough subareas are metered. Many upstream areas are unmetered. Because of this, you can't confirm that the townships' sewer system I/I is being controlled. Can meters be installed in these areas?

Appendix P – Hanover Township – I/I Source Reduction Plan

Does Hanover Township's metering station (with telog system) connect with the LCA / Allentown's sewer system?

What is the wastewater flow that enters the LCA/Allentown sewer system during dry and wet weather periods? Do any of the sewer pipes, located within the Township, need to be expanded?

Because of reduced size, I could not read the information on the Hanover Township, Sanitary Sewer System Plan View.

Chapter 94 / Municipal Wasteload Management Report for 2017

The Department is also including a Summary of our Review Comments for the aforementioned report.

**2017 Annual Wasteload Management Report
Allentown Kline's Island Wastewater Treatment Plant
Operated by LCA**

The following includes a review comment for Allentown and the 15 Permittees of sewer systems which contribute sewage flows to Allentown's plant. Chapter 94.12(a)(5)-(8) Regulations indicate by the corresponding numbers (5)-(8) are considered for the tributary municipalities or permittees.

Summary:

- Reports from Allentown and most tributary permittees indicated that there were issues of Infiltration and Inflow (I&I).
- Monitoring, rehabilitation and repairs were being performed to address the I&I.
- No major capacity related problems were identified in the report except the following: the Borough of Emmaus had identified one area in the collection system, serving 800 EDUs, which may be physically capacity limited; LCA's projected maximum flows for Spring Creek Road Pump Station is 100% capacity during periods of wet weather; no capacity allocation was available for purchase from the City of Allentown and Upper Macungie's Applewood Pump Station is in a projected overload status.

1. Allentown

- No capacity allocation was available for purchase from the City of Allentown.

- Proposed joint Act 537 Plan between LCA and Allentown was put on hold by DEP pending resolution of WLI SCARP study.
- Ch. 94 report indicated that a new industrial waste ordinance (ordinance #15346) was passed by City Council on 2/1/17 and enacted on 2/9/17, which amends Article 941 (Title 5- Sewers). No attachment of the new ordinances was found with the Chapter 94 Report or Pretreatment Report.

2. Coplay-Whitehall Sewer Authority (CWSA):

- The report indicated that there were attachments to the report (the attachments were also referenced in the report), but no attachment was found with the report.
- The report indicated that a copy of new ordinances, CWSA Resolution #368, adopted on 09/21/2017 was attached with the report, but the attachment was not found.

3. Lehigh County Authority

- Projected maximum flows for Spring Creek Road Pump Station is 100% capacity during periods of wet weather. A solution will involve expansion of the Pump Station, and reduction of I/I.

4. Upper Macungie Township

A discussion of sewer system monitoring:

- Infiltration and Inflow removal program is an ongoing operation in accordance with the LCA Wasteload Management Plan. It is part of the comprehensive flow study of the LCA sewer collection system. The Township is participating in SCARP.

A discussion of the condition of the sewer system

- The Township's sewer system is undergoing extensive evaluation and rehabilitation efforts as required by EPA Administrative Order (AO) and PA DEP SCARP Plan.
- Projected sewage flows through certain segments of the system may exceed the design and/or permitted capacity dependent upon the rate of development within specific areas of the Township particularly for large, high sewage discharge industrial users. These areas are being addressed as they are identified and as development rates within these areas dictate.

Pump station

- The report listed 6 pump stations. For 3 pump stations identified as Holiday Inn, Country Meadows and Coldwater Xing, the present maximum flows and comparisons of the pumping rates with the present & projected 2-year maximum flows were not provided. These 3 pump stations are not monitored. For the remaining 3 pump stations identified as

Applewood, Rabenold and Kaybrook pump stations, the pumps' capacity, 2017 maximum and average influent flows (GPM) to Wet Well and projected 2-year maximum flows were provided.

- The report indicated unreliability of influent meter data. It stated that proposed projects involving significant additional sewer flows may necessitate a detailed study of available capacity for any of the 5 pump stations as was recently done for the Applewood Pump station.
- I&I conditions are being investigated in the existing sanitary sewers in the upstream drainage areas of the pump stations on an on-going basis during wet weather conditions. Sanitary sewer rehabilitation is being completed on a continuing basis to reduce extraneous flows to all pump stations.
- **Applewood Pump Station:** this pump station is in a projected overload status based on the submission of a planning module for the Lehigh Hills Subdivision. Efforts are underway between the Township and the Developer to address the projected overload, which may result in total replacement of the pump station. If the pump station is not replaced at this time in order to serve the proposed development, given the age of the existing pump station the Township is projecting the need to replace the pump station within the next 10-15 years.

Industrial report:

- No specific problem

5. Borough of Emmaus

- The Borough had identified one area in the collection system, serving 800 EDUs, which may be physically capacity limited. The flow limitation for this area is two sections of 10-inch vitrified clay pipe which have a critical low slope, from MH C292 to MH C294, near Eagle Drive in the southwest portion of the Borough. In 1995, surcharge was noted. In a study made in 2002 and 2003, it was found out the section has marginal capacity for additional customer base during maximum historical flow event.
- The report indicated that Codified Ordinances and updates were on file at the City and Borough offices but didn't indicate a copy was sent to DEP with the Chapter 94 report. A copy of the Ordinances should be submitted to DEP if it was not already submitted. The Borough is currently preparing an update to a chapter in the ordinances. A copy of the updated ordinances should be submitted to DEP.

6. Salisbury Township

- Salisbury Township maintains two pumping stations. Pumps capacities were provided, but no information was given regarding the present maximum flows for each station, a comparison of the maximum pumping rate with present maximum flows for each station and a comparison of the maximum pumping rate with the projected 2- year maximum flows.

- The report indicated that a copy of (industrial waste) ordinance No. 12-2015 – 2015 which increased sewer rates from \$52.60 to 69.30 per quarter was attached. But no attachment was found.

7. Alburdis Township

- No information was provided regarding the present maximum flows for the pump station, the maximum pumping rate or a comparison of the two.

End of Chapter 94 Report summary.

The Regional Flow Management Strategy (RFMS) should incorporate all stated hydraulic / organic loading constraints, and conveyance and treatment constraints to meet your projected growth potential for at least the next 20 - year period through this planning effort.

The RFMS should also incorporate the long-term solution to the most recent surcharging sewer system / manholes and associated overflows., observed in November 2018 / early December 2018 between the LCA pretreatment plant and the LCA Spring Creek Pump Station along the Western Lehigh Interceptor.

Please distribute the letter to the KISS Respondents and all municipalities named in the USEPA Administrative Orders.

It is requested that a response to this letter be received by March 29, 2019. Please send your response to the address listed on the letterhead.

After the Department has received your response, we are willing to meet with you and representatives of the affected municipalities.

If you should have any questions or wish to discuss any matter for clarification, please contact me at 570-826-2335.

Sincerely,



James A. Ridgik P.E.
Environmental Engineer
Clean Water Program

cc: Pat Mandes/Chief Compliance Officer/LCA

FINANCE & ADMINISTRATION

ACTION ITEMS

1. Real Property Transaction – January 14, 2019

The Board authorized the staff to negotiate a real estate transaction involving parcels of land bordering the pretreatment plant site in Upper Macungie Township at its March 23, 2018 meeting. This transaction involves the Authority swapping its 13.5-acre parcel with Landston Equity, Inc.'s adjoining 23.7-acre parcel, the latter of which is better suited for the Authority's potential future pretreatment plant expansion. Negotiations are complete and the transaction is nearing closing, so the staff is asking for official action approving the transaction and authorizing management to conclude the transaction. Resolution No, 1-2019-1 is included for consideration.

DISCUSSION ITEMS

1. LCA 2020 Action Plan & Update – January 14, 2019

In 2017, LCA staff began development of a three-year action plan on key organizational goals related to financial viability, infrastructure stability, product quality, and employee and leadership development. A review of progress on the 2018 action plan, and updated plans for 2019 and 2020 will be presented at the January 14, 2019 Board meeting.

2. Preliminary 2020-2024 Capital Plan – January 28 & February 11, 2019

Staff will present the preliminary 2020-2024 Capital Plan, which will follow the revised planning cycle developed in July 2018. The revised planning cycle was intended to allow for more time to review projects and priorities, funding sources and rate impacts of LCA's plans. The presentation of the preliminary plan will be divided into two parts (Suburban Division – January 28, 2019 and Allentown Division – February 11, 2019) to allow for full discussion of the projects and financial impacts. Board review, public distribution for comment, subsequent staff revisions and final review and approval is expected to be completed within the first quarter of 2019.

INFORMATION ITEMS

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

CERTIFICATES OF DEPOSIT						
27-Nov-18			Gross	Date of	Date	Net Rate
Fund	Bank	Location	Amount	Purchase	Due	%
LLRI CR	Discover Bank	Greenwood, DE	245,000.00	11/7/18	11/9/20	3.00
LLRI CR	JP Morgan Chase Bank	Columbus, OH	245,000.00	11/16/18	11/16/20	3.05

- 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:

5354 Hamilton Blvd., 1 commercial lot, LMT – No Change
Above & Beyond (personal care facility), 2 commercial lots, UMT – No Change
Fields at Indian Creek, Phase 3, 57 residential units (sfd), UMiIT/Emmaus, water & sewer – No Change
Kohler Tract, 123 residential lots (sfa), UMiIT, water and sewer – No Change
Lehigh Hills, Lot 2 Pad Sites, 1 commercial lot with medical office building & restaurant, UMT – No Change
Lower Macungie Twp. Community Center Expansion, 1 institutional lot, LMT – No Change
Trexler Business Center, 1 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:

5329-5347-5357 Hamilton Blvd., 1 commercial lot, LMT – No Change
5374/5392 Hamilton Blvd., 1 commercial lot, LMT – No Change
8615/8783 Congdon Hill Drive, 2 industrial lots with warehouses, LMT – No Change
Cedarbrook Road Industrial Park, 2 industrial lots, LMT – No Change
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
Hickory Park Estates, 3 residential lots (sfd), UMT – No Change
Hidden Meadows, Phase 1C, 66 townhouses, 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
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
Ridings at Parkland, 63 residential units (sfd), NWT – No Change
Schoeneck Road, Lot 1, 1 lot warehouse, LMT – No Change
Shepherd's Corner, 1 commercial lot, LMT – No Change
Stone Hill Meadows, Phase 2, 85 residential units (sfd), LMT – No Change
Towneplace Suites by Marriott, 91-room hotel, UMT – No Change
Weilers Road Twins, 82 residential lots (sfa), UMT – No Change
Woodmere Estates, 60 residential units (sfd), UMT – No Change
Woodmont Ridge, Phase II, 30 apartment units, UMT – No Change

Sewage Planning Modules Reviewed in Prior Month:

Werley Road LPSS, UMT, 1115 gpd.
Daniel Street LPSS, UMT, 892 gpd.
6503 Lower Macungie Road, LMT, 465 gpd.
Depot Properties, LLC, LMT, 485 gpd.
Red Maple MHP Expansion, LMT, 6467 gpd.
Main Street Commons, Macungie, 223 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 construction phase was approved at the December 2016 Board meeting and the construction phase at the January 2018 meeting. As of February 22, 2018, the contractor has completed a majority of the relocation work for LCA's facilities; however, they were pulled off the site due to construction conflicts. It is anticipated at this time the contractor will return by late early spring 2019 to finish all of the LCA line relocation. 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 – Water Main Replacement Program Cycle 4

The project is the replacement of 0.97-mile of aged and/or failing cast iron water main in multiple locations throughout the City, in accordance with our prioritization protocol. We propose to utilize the 1.1 mile credit of excess water main replacement length accumulated from previous years in order to satisfy the 2.0 miles of annual pipe replacement as outlined in the lease. This Project is required under the Operating Standards in the Concession Agreement and will be funded by the LCA Allentown Division. The reduced-scale project was re-bid following rejection of the bids for the original 2.2 mile project. The project was authorized by the Board on 9/10/18 and will be completed by December 2018. As of October 30, 2018 or contractor Doli Construction Corp has begun water main installation and is progressing. Water main construction is anticipated to be completed by January 3, 2019 with paving completion by late April 2019.

3. Allentown Division – Water Main Replacement Program Cycle 5

The project is the replacement of 2-mile of aged and/or failing cast iron water main in multiple locations throughout the City, in accordance with our prioritization protocol. Currently the construction phase of this project is not budgeted for unless monies become available in early 2019.

4. Allentown Division – Water Filtration Plant: SCADA System Replacement

The project consists of the replacement of the existing SCADA System at the Water Filtration Plant. The purchase and installation of new servers, new control panel cabinets, new cabling, and new programming software will encompass this project. Board approval to purchase this equipment was granted at the August 27, 2018 Board Meeting. Replacement will be completed by late 2019. This project will be funded by LCA Allentown Division. **(No Change)**

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

The project consists of the addition of a carbon dioxide feed system at the Allentown Water Plant. With the present conversion from alum to polyaluminum chloride (PACl) as the plant's primary coagulant, proper treatment requires the raw water to be kept within a very small pH range for optimum treatment. The acid feed system will control pH within tight parameters to achieve treatment goals. A Major Permit Application has been submitted to PaDEP. This project has been delayed several times mostly due to the permitting process, and the goal for Installation and startup is now in the Q4 timeframe. Approval for the construction phase was granted at the

October 8, 2018 Board meeting. Construction began on 11/26/2018 and completion is anticipated by mid-January. This project will be funded by the LCA Allentown Division.

6. **Suburban Division - Water Main Replacement Program Cycle 4**

The project consists of the replacement of approximately 1.36 miles of aged and/or failing Cast Iron water main throughout multiple location in the Suburban Division. The LCA Suburban Division will fund the project. The project bids were opened on July 18, 2018 and project authorization was awarded at the 7/23/18 board meeting. As of early December 2018 the project has been completed and LCA is awaiting final closeout documentation from our contractor that we should be obtaining by the end of the year.

7. **Suburban Division – Mechanical Asset Management Upgrade Project**

This next phase of Asset Management upgrade work focuses on mechanical components, along with some HVAC and electrical system improvements at ten locations in the Suburban Division. The upgrade locations were determined from asset management data collected from internal interviews conducted by Capital Works with senior Operations staff, and based on risk rating. Also as part of the design phase of this project was the condition assessment of seven (7) hydropneumatic tanks that were placed into service in the 1970s and are reaching the end of their service lives. Design phase was authorized in April 2018, the project was advertised for bid in September 2018, bids were opened on October 11, 2018, and award of bids was authorized at the October 22, 2018 Board meeting. Construction will be finished by Summer 2019.

8. **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 interconnect the Central Lehigh Division (CLD) with the Upper Milford Division (UMD) allowing the abandonment of the UMD water supply facilities, and to provide water service to the proposed 123-lot Kohler Tract subdivision in Upper Milford Township. Design of the pump station is under way. The Public Water Supply (PWS) permit has been issued by DEP. One property owner has granted us a water line easement. We are investigating an alternate site for the pumping station. **(No Change)**

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

The project consists of installation of a new booster pumping station with SCADA and water main extension to pump water from the Lower Pressure System to the Upper Pressure System. The LCA Suburban Division will fund the project. Bids for the project were received on 6/29/18. Board approval for the construction phase of the project was granted at the 7/23/18 meeting. A preconstruction meeting was held on August 28th and construction should be completed by late Spring 2019. **(No Change)**

10. **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 include radon reduction elements and also accommodate the future installation of additional radon removal equipment, to be implemented upon DEP's mandate of a regulatory limit. Design phase was authorized at the August 28, 2017 Board meeting. The Public Water Supply Permit was submitted to DEP at the end of July 2018 and completion of design is held up pending incorporation of DEP permit application review comments. Bid phase is expected to occur in early 2019. **(No Change)**

11. **Suburban Division – Watershed Monitoring Program**

The project will include setting up a surface water flow-monitoring network for the Little Lehigh Creek. The work is in response to the Watershed Monitoring Plan that was developed and

reported to LCA by Al Guiseppe (SSM, Inc.) in 2017. Flow monitoring in 2018 will focus on the Little Lehigh Creek only. In 2019, LCA will develop plans to add new monitoring wells to supplement existing groundwater data that is being collected. Total daily flow recordings at Schantz Spring that will need to include the spring field bypass and the tank overflows as well. SSM will assist LCA in calibrating surface flows under the bridges based on the recorded stream elevations. Authorization for the award of the project was approved at the 3/26/2018 Board meeting. LCA and Fybr are currently gaining PennDOT and PPL approvals that will allow us to mount our equipment on their bridges and poles, which has turned out to be a very slow process. **(No change)**

12. Suburban Division – Water Meter Reading Equipment Upgrade

The Project includes the replacement of 20,000 transceiver units. 10,000 units will be replaced in 2019 and the remaining will be replaced in 2020. The new units have a 20-year battery life and are compatible with the new meter reading software purchased in 2017. This project will replace approximately 100% of the remaining old style radio units over a two-year period. The project is in design phase and will be put out to bid in early 2019.

13. Suburban Division - Additional (Redundant) Water Supply - Small Satellite Divisions

This Project addresses the needs of three satellite water systems that currently are operating on one source of supply and have no redundant water supply. The Madison Park North system has only one well, and an additional well is planned to be developed and constructed. The Clear View Farms and Mill Creek systems have one operating well each, but have at least one other existing well that has water supply or quality issues and cannot be presently utilized. An engineer has been retained to assist with the development of a second well for Madison Park North and the rehabilitation of an existing well at Clear View Farms. An agreement is in place with an adjoining property owner to Madison Park North to drill a test well on their property, in coordination with DEP guidelines. The exploratory well is scheduled to be drilled in early January 2019, and will provide adequate data to determine the feasibility for constructing a permanent well on the site.

WASTEWATER

ACTION ITEMS

DISCUSSION ITEMS

1. **USEPA Administrative Order – Sanitary Sewer Overflows – Update – January 14, 2019**

The Pa. Department of Environmental Protection (DEP) has issued a response to the City of Allentown and LCA related to the Regional Flow Management Strategy submitted to the USEPA in August 2018 regarding elimination of sanitary sewer overflows, which is subject to an Administrative Order (AO) issued to all parties in 2009. No response has been received directly from USEPA. The DEP response is a request for additional information from the AO respondents to provide additional details on plans for flow characterization, operations and maintenance plans and source reduction plans, as well as planning information regarding future anticipated flows due to system growth and the impacts on hydraulic and treatment capacity. A meeting among all AO responding municipalities has been scheduled to review the DEP letter and coordinate a response by the March 29, 2019 due date.

2. **Suburban Division – Western Lehigh Interceptor – Trexlertown Upgrade – January 28 or February 11, 2019**

Additional wastewater conveyance capacity is required in the segment of the WLI Interceptor that runs through the Trexlertown area. This project was outlined in the alternatives analysis prepared in response to the USEPA Administrative Order to eliminate sanitary sewer overflows as a section that has reached its hydraulic capacity to convey dry-day and wet-weather flows. The alternative selected by the Western Lehigh Sewerage Partnership includes an aggressive program to remove sources of infiltration and inflow (I&I) to reduce wet-weather flows, plus selected interceptor upgrades to address overall system capacity needs. Preliminary cost estimates for the Trexlertown area interceptor upgrade and for the Iron Run pump station and force main (as an alternative option) were completed by an engineering consultant and a memorandum summarizing the two alternatives will be completed in January for discussion with the Board prior to moving forward on planning, design and permitting of the selected alternative.

3. **Heidelberg Heights and Lynn Township Sewer System Updates – February Date TBD**

Excessive inflow and infiltration (I&I) and high wet-weather flows into the Heidelberg Heights and Lynn Township sewer systems have been ongoing and increasingly challenging to address. As noted in LCA's monthly operations report, treatment plant bypasses and sanitary sewer overflows have occurred more frequently in these systems and must be addressed. Staff has been working to develop corrective action plans (CAPs) that include structural and non-structural initiatives and involve coordination with the host municipality. The framework for the CAPs will be shared with the Board in February.

4. **Allentown Division Wastewater Master Plan – February Date TBD**

The Kline's Island Wastewater Treatment Plant Master Plan will be completed in early January 2019. Tim Bradley, P.E., will give a presentation at a Board meeting where the results and conclusions of the Master Plan are to be discussed.

INFORMATION ITEMS

1. **Allentown Division – Kline's Island WWTP: Miscellaneous Clarifier 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 was completed at the end of August 2018 and minor punch list items were resolved in December. The project is now 100% complete. This capital project was funded by the LCA Allentown Division.

2. **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. The 30% design drawings and specifications have been received. The City has now directed to “pause” the design phase of the project as the EPA is scheduled to provide further AO direction. **(No Change)**

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

This project involves the 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 will include Condition Assessments, Process Optimizations, and both short-term and long-term Capital Improvement 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 for the wastewater system. A Request for Proposal (RFP) was released to five (5) qualified firms on 12/15/2017 and the proposal due date was 1/26/2018. Authorization for the award of the contract was approved at the 3/12/2018 Board meeting. A kickoff meeting was held on May 24, 2018. Data collection and site assessments have been completed. Condition Assessment, Process Optimization and Capital Plan Workshops have been conducted. The Capital Plan Section, as well as the entire Master Plan Project, are to be completed in Q1 2019. This project will be funded by LCA Allentown Division.

4. **Allentown Division – Kline’s Island WWTP: Primary No. 2 Digester Miscellaneous Improvements**

This project includes miscellaneous improvements (additional scumbuster and control panel, minor pipe replacement, etc.) for the Primary No. 2 Digester at the wastewater treatment plant. The project was advertised in late April 2018 and bids were received on May 24, 2018. Construction approval granted at the June 11, 2018 Board Meeting. Construction began in early August and was completed at the end of September. Minor punch list items were resolved in early December. The project is now 100% complete. This capital project was funded by the LCA Allentown Division.

5. **Allentown Division – Kline’s Island WWTP: Electrical Substation Replacement**

This project involves the replacement of the existing Substation 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. The project was advertised in early May 2018 and bids were due on June 8, 2018. Approval of the construction contract (Base Bid) was granted at the July 9, 2018 Board Meeting. The construction phase of the project began in August of 2018 and will be completed by October 2019. This Major Capital Project will be funded by the LCA Allentown Division. **(No Change)**

6. **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 finished by Summer 2017. Additional scope work under existing contract has been performed and is anticipated to be closed out in early 2019 **(No Change)**.

7. **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. The project is currently under construction. High flows to the pump station due to wet-weather events have continued to delay work on the project so completion is expected to be pushed back to the beginning of 2019.

8. **Suburban Division – Park Pump Station Force Main Rehabilitation**

The Park Pump Station and Force Main line were constructed in 1980 to provide wet weather relief to the Little Lehigh Creek Interceptor, which conveys wastewater from ten municipalities from outlying areas to the Kline's Island Wastewater Treatment Plant (KIWWTP). The force main consists of 8,715 linear feet of prestressed concrete cylinder pipe (PCCP) of various sizes (2,615' of 24"; 2,695' of 30"; and 3,405' of 36"), and connects with the 54" sanitary sewer interceptor that runs to KIWWTP. PCCP is particularly sensitive to deterioration due to hydrogen sulfide gas from wastewater, and corrosion of exposed reinforcing steel can result in structural degradation and pipe failure. An internal investigation of the pipe is required to assess the condition of the PCCP pipe and identify damage areas, in order to determine the locations and extent of rehabilitation needed to restore the level of service, prolong service life, and mitigate the risk of failure. Capital Works is planning a limited manned inspection of the force main pipe at 5 air release valve (ARV) locations, 100 feet in both directions from the ARV manhole, which will be used as the initial evaluation of the representative condition of the pipe. Using this data, the need for performing a complete pipeline condition assessment will be determined, possibly utilizing a new electromagnetic technology for performing an internal pipe condition assessment that entails minimal interruption of operation of the pump station and force main. LCA and Arcadis are currently waiting for a "normal flow" dry weather period to use the PTP Flow Equalization Basin (FEB) at the pretreatment plant to hold back flow in order to perform a temporary shut-down of the Park Pump Station to perform the force main inspection. **(No Change)**

9. **Suburban Division – Park Pump Station Upgrade**

The Park Pump Station is to be upgraded to address mitigate risk of failure, restore station capacity, and prolong the service life of this critical facility. Design was completed in December 2017. The Park Pump Station Upgrade was advertised for bid in December 2017, pre-bid meeting was held on 1/4/18, and bids were opened 2/1/18. Construction phase was authorized at the 2/12/18 Board meeting. Notice to proceed for the construction contracts was issued dated 3/26/18. A pre-construction meeting was conducted in early April 2018, and construction is anticipated to be completed by Summer 2019. **(No Change)**

10. **Suburban Division – Heidelberg Heights Wastewater Treatment Plant Improvements**

As part of an asset management approach to maintaining the level of service and mitigating risk of failure at the Heidelberg Heights Wastewater Treatment Plant, a condition assessment evaluation is being performed for the Equalization/Sludge Holding tank. The steel tank is part of the original plant, installed in the mid-1970s, and is compartmentalized to serve as both a raw sewage equalization tank (for sequenced pumping to the newer SBR tanks), and for storing

liquid sludge (for pump and haul removal). The exposed portions of this tank display areas of corrosion, and the tank was drained and cleaned and a thorough assessment was performed to determine structural integrity and remaining service life, and a study provided to LCA. Design phase services will be completed in early 2019 for a structural improvements project to be constructed in 2019. **(No Change)**

11. Suburban Division – Wynnewood WWTP Upgrade Project

Wynnewood Terrace WWTP was constructed in 1980 by the developer to serve the Wynnewood Terrace subdivision, located in the Laury's Station area in North Whitehall Township. Sewer service is provided to approximately 217 residential and 2 commercial properties. LCA acquired the system in 2003.

The plant, while meeting effluent limits, has reached the end of its useful life. The plant is constructed of in-ground steel tanks that are in poor condition, with areas of corrosion and loss of structural integrity. The mechanical and electrical systems are also at the end of their service life and in need of replacement. The proposed project includes replacement of the existing treatment facility in entirety with new technology and concrete tanks appropriate for the wastewater flows and loading characteristics. The new facility shall meet the effluent limits criteria established in the respective DEP and DRBC permits, including new or additional limits that may be imposed during the permitting process. Design phase was authorized in February 2017 and was concluded in late Summer 2018. The DEP Part 2 Water Quality Management Permit was received in March 2018. The project was advertised for bid in August 2018, bids were opened in September 2018, and bids were authorized for award at the October 22, 2018 Board meeting. Construction work will proceed in 2019 and finish in early 2020. **(No Change)**

12. Suburban Division – Sand Spring WWTP Upgrade Project

The Sand Spring WWTP was constructed in 1972 by the developer to serve the Sand Spring development, located in the Schnecksville area in North Whitehall Township. Sewer service is provided to approximately 248 apartment units, 8 commercial properties, and an elementary school. Lehigh County Authority (LCA) acquired the system in 2005.

The plant, while meeting effluent limits, has reached the end of its useful life. The plant is constructed of in-ground steel tanks that are in poor condition, with areas of corrosion and loss of structural integrity. The mechanical and electrical systems are also at the end of their service life and in need of replacement. The proposed project includes replacement of the existing treatment facility in entirety with new technology and concrete tanks appropriate for the wastewater flows and loading characteristics. The new facility shall meet the effluent limits criteria established in the respective DEP and DRBC permits, including new or additional limits that may be imposed during the permitting process. Design phase was authorized in February 2017 and should be concluded by late 2018; progress has been delayed due to DEP permitting issues. Following DEP approval of the Water Quality Management Permit (received in late December 2018), the project will proceed to bid phase in early 2019. **(No Change)**

13. Suburban Division – SCARP

EPA is considering terminating the Administrative Order after submission and approval of a regional flow management strategy (RFMS) inclusive of all EPA AO respondents. EPA has indicated that the following critical elements should be included in the program: collection system operation and maintenance plan, system characterization, source removal, flow modeling, and flow targets. Should this action take place, then the Pa. Department of Environmental Protection would resume its enforcement oversight of the program through the Chapter 94 regulations.

The submission for all City Signatories was sent to EPA for the August 1st deadline. The submission included the RFMS inclusive of all Signatories, individual Operation & Maintenance plans, and individual Source Reduction Plans.

Peak flow reports were presented to all City Signatories so there is an understanding of what system conditions caused the various bypasses and overflows in August during the wet weather events. Peak flow reporting has included 17 storms between May and mid-December that generated flows at the WWTP in excess of 60 mgd. Four of the storms caused a bypass at the KIWWTP. See discussion item for additional information.

14. Sanitary Sewer System Flow Metering for WLI

The installation of the 35 flow meters began in mid-December and continues. It takes approximately one month to resolve metering issues and have confidence in the meter data. All meters will be installed and operating properly by the end of January.

15. WLI High Flow Emergency Declaration

LCA began the Emergency Response protocol to deal with the high flows within the Western Lehigh Interceptor (WLI) on November 28, 2018. The Emergency was presented to and approved by the Board on December 10, 2018. Through December 28, 2018, the entire Iron Run Trunk Line (IRTL) has been televised from outside the Pretreatment Plant (PTP) down to the confluence with the Breinigsville Line, which is south of Hamilton Boulevard. The total distance televised in this reach was 7,115', and includes 93 manholes. In this section, LCA has identified 18 defects within that reach, the majority of which are joint leaks, along with heavy sediment in several areas. Once repaired, staff expects to have eliminated approximately 500,000 gallons per day of infiltration from the interceptor. Repair work will begin immediately in 2019 while additional downstream inspection is ongoing. The next priority area is to televise the interceptor from where the IRTL and the Breinigsville lines meet down to the Spring Creek Pump Station. This work will continue on an expedited emergency basis as long as conditions warrant.