

Lehigh Valley Planning Commission

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Executive Director

September 5, 2017

Mr. Charles Volk, PE
Chief Capital Works Officer
Lehigh County Authority
P.O. Box 3348
Allentown, Pennsylvania 18106-0348

Re: LCA Preliminary Capital Plans - Allentown and Suburban Divisions 2018-2022

Dear Mr. Volk:

The Lehigh Valley Planning Commission (LVPC), at its regular monthly meeting on August 31, 2017, reviewed the above-referenced plans and would like to offer the following comments. The comments, as shown on the attached page, are provided for water and wastewater projects appearing for the first time in the Capital Plans. The Suburban Division Capital Plan includes one new project and the Allentown Division Capital Plan includes three new projects for which comments are provided.

Please call me if you have any questions.

Sincerely,

Susan L. Rockwell
Senior Environmental Planner

cc: Lehigh County Commissioners

Environment Committee		LVPC PROJECT REVIEW SUMMARY SHEET		Date: August 2017
TITLE		BRIEF STATEMENT	LVPC COMMENT	
1. Lehigh County Authority (LCA) Preliminary Capital Plans (2018-2022)		<p><u>Allentown Division</u> New Projects: <u>Water</u></p> <ul style="list-style-type: none"> • Filter Upgrades • Intake Upgrades <p><u>Sewer</u></p> <ul style="list-style-type: none"> • Indenture Report Improvements - Annual report identifies improvements including general repairs, and security, structural, pipe protection and electrical upgrades 	Improvements that will result in more efficient, safe and reliable sewer and water service are consistent with the County Comprehensive Plan.	
		<p><u>Suburban Division</u> New Project: <u>Sewer</u></p> <ul style="list-style-type: none"> • Park Pump Station – Sister Station - Planning and preliminary design of a “sister pump station” next to existing Park Pump Station to provide for future conveyance capacity needs over next 20 years as identified in draft Act 537 Plan and other studies. 	Act 537 planning should be completed as a prerequisite to this project. Capacity for future growth should only be provided for areas recommended for urban development in County Comprehensive Plan.	



Allentown
City without limits.

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown PA 18103
610.437.7587
Fax 610.437.7614
craig.messinger@allentownpa.gov

September 8, 2017

Philip DePoe, P.E.
Capital Works Program Manager
Lehigh County Authority
P.O. Box 3348
1053 Spruce Street
Allentown, PA 18106-0348

RE: Draft 5-Year Capital Plan, Allentown Division, 2018-2022

Dear Mr. DePoe

Pursuant to Article 4 of the Concession and Lease Agreement (Lease), the City of Allentown (City) is responding to your *updated Draft 5-Year Capital Plan, Allentown Division, 2018-2022* (2018 CP) received 8/25/2017. The following responses and comments are on the Major Capital Improvement Projects (MCIP) and those projects that have a financial impact on either the City or City Ratepayers.

AD-W-7 Water Main Replacements

Water Main Replacements is a requirement of the *Operating Standards A 6.19.2 Evaluation and Replacement Requirements*. Since the Centrifugally Spun Cast Iron Water Main Pipe and Water Distribution Replacement projects required under Schedule 7 of the Lease are now complete, the 'Project Type' noted on the capital program summary spreadsheet and detailed sheet should be changed from S-7-MCI to LCA-MCI.

The \$4,800,000 estimated project cost for replacement of approximately two miles of water main is extreme when compared with the average final costs from the last three cycles of approximately \$2,800,000. The City requests LCA explain the disparity in the projected cost as compared with the historical costs.

AD-W-10 Emergency Power at WFP – Crystal & Schantz Spring pumps.

This project is not approved as an MCIP. The City continues to be opposed to this project due to lack of justification. The City's *Allentown Division, Preliminary 2017-2021 Capital Plan response (9/1/2016 letter, attached with section highlighted)*¹ included comments and information requests in regard to this project. The City

responded to LCA's response, *Allentown Division, Preliminary 2017-2021 Capital Plan LCA's 10/4/2016 Response to City Comment Letter (11/16/2016 letter, attached)*² stating several issues which LCA has ignored or simply has not addressed.

Additionally, in LCA's response to the City's request for a copy of the current Emergency Response Plan *RE: November 16, 2016 letter to Frank Leist requesting a copy of the current Emergency Response Plan, (12/2/2016, attached)*³, it is noted that the justification for the generator was based on a table-top exercise documented in a report titled *WFP Transformer Explosion Outage Tabletop Exercise After Action Report (11/5/2015)*. The report does not include a recommendation to purchase a transformer, nor a mention of a regional power failure.

During the 12/16/2017 Emergency Response Plan (WWTP & WFP) Review meeting, Mr. Kevin German indicated that subsequent investigations determined that a suitable generator was available through Lehigh County if needed. Although it was not included in the report as being part of the response, Mr. German indicated that the wells in the Central System were available to address water needs in that service area.

With respect to the justification in the *Draft Allentown Water Master Plan*, the draft report states in Section 3.10 'Plant Electrical Utility':

All assets are in good to moderate condition. The plant does not have an auxiliary generator but relies on its dual electrical feeds for a redundant electrical supply. Furthermore, the distribution system has sufficient storage to last without the Water Filtration Plant for approximately two days. However, a regional and prolonged power outage could result in significant level of service and regulatory impacts.

The above referenced section provides support for addressing a situation for which there is no history, indication, nor probability that it could occur. In addition, the procurement of a generator for Schantz and Crystal Springs is in direct contradiction to other sections of the *Draft Allentown Water Master Plan* which addresses providing for filtration of the springs, in which case the generator would not serve the intended purpose.

Before continuing with this project, LCA needs to address and respond to the issues and concerns presented by the City. It is the City's opinion, based on the justification for implementation, that this is a "nice to do" project versus a "necessary to do" project.

AD-W-11 Schantz Spring Main Replacement

This is a Schedule 7 project which is underway and to be completed by the end of January, 2018. Completion of this project will close out all Schedule 7 projects.

AD-W-15 Itron/AMR Meter Project

This is an on-going Uncompleted Work project.

AD-W-16 Pre-Lease Valve Replacement

This is an on-going, Uncompleted Work project, not listed in the 2018 CP. Per mutual agreement, this project will not be completed until next year (2018) due to scheduling valves #3915 and #6771 near Sacred Heart Hospital on Chew Street.

Also, per prior agreement, the City will be paying \$370,000 annually towards the completion of this project. Reference attached Capital Plan response letters *Allentown Division Proposed 2016-2020 Capital Plan Response (10/13/2015)*⁴ and *Allentown Division Preliminary 2017-2021 Capital Plan COA Response (9/1/2016)*⁵

AD-W-22 Filter Upgrades

This project is not approved as an MCIP. This project which has an initial \$200,000 cost in 2018 and a total project cost of \$12,340,000 is not approved as a Major Capital Improvement Project as the use of aggregation for other than pipelines to qualify a project as a MCIP is still in dispute. Further, even if this were an approved MCIP, in accordance with Section 7.1 (f) of the Lease, as a MCIP it would result in a Capital Cost Recovery Charge and "... that the City may withhold its Approval of any proposed Capital Cost Recovery Charge that includes for any Reporting Year during the permitted Cost Recovery Period a Capital Cost Recovery Charge that is greater than 200% of the Capital Cost Recovery Charge for any other Reporting Year." As the City may withhold its approval for CCRC, this project should not be included in the Capital Plan with an indication of "Funding" by CCRC. Funding through CCRC is reserved for approved MCIPs.

AD-W-23 – Intake Upgrades

Although this project's plan indicates it will not get underway until 2020, It is expected that more information and review related to the project will be provided in the interim. Appreciating the voluminous *Draft Allentown Water Master Plan* was only provided to the City on 8/21/2017 (10 days after the LCA Capital Plan review period began), initial reviews of the report didn't identify the reasons and rationale for the work at the Big Lehigh Intake facility other than to note that the screens required manual cleaning (Section 4.3 and Appendix D) and a singular statement "Travelling screens, screenings handling facilities, and powdered activated carbon will be installed at the Big Lehigh Intake/Pumping Station." (Section 3.1.1).

'Appendix B, Process Optimization Report' of the *Draft Allentown Water Master Plan* is used to identify and prioritize capital projects that reduce risk, The Big Lehigh

Intake is not noted in 'Section 2.1, Process Reliability' only the Little Lehigh Intake is noted.

The Big Lehigh Intake is used infrequently as a raw water source. The *Draft Allentown Water Master Plan* indicates that it will represent 75% of the costs for intake improvements. It is reasonable to assume, that expenditures would match proportionately to supply and if this assumption is not valid, then, a closer examination of alternative solutions is warranted. A review would seem even more appropriate when one considers that based on useful life expectancy, as defined in the *Draft Allentown Water Master Plan*, that a similar replacement project would be necessary before the end of the Lease.

The Big Lehigh Intake Pump Station is run approximately twice per month to exercise equipment, page 6 of 'Appendix D - Near Term Project Descriptions (Years 0-10)' of the *Draft Allentown Water Master Plan* which states "LCA currently limits operation of the Big Lehigh intake facility to less than 3 mgd due to (1) taste and odor complaints received when this supply is in use and (2) manual and maintenance intensive cleaning of the existing bar screens." The *2016 WFP Annual Operating Report* indicates that the daily use of the Big Lehigh intake facility averaged approximately 0.17 mgd; which is only 1.6% of the total surface water supply.

In addition, it is noted that LCA's *Draft 5-Year Capital Plan, Allentown Division, 2018-2022* lists the total expected cost to be \$11,120,000. This is two million dollars more than cost estimates presented in the *Draft Allentown Water Master Plan*.

Those costs are detailed in Appendix C:

Big Lehigh Screens and PAC	\$5,500,000
Little Lehigh Screen Housing	\$400,000
Little Lehigh Intake and Screens	<u>\$1,500,000</u>
Total	\$7,400,000
Adding 20% for engineering and project management	<u>\$1,480,000</u>
Revised Total	\$8,880,000

In summary, the City expects that LCA will scrutinize this proposed capital project in greater detail as it is developed.

Similar to project AD-W-22 Filter Upgrades, even if this were an improved MCIP, in accordance with Section 7.1 (f) of the Lease, as a MCIP would result in a Capital Cost Recovery Charge and "... that the City may withhold its Approval of any proposed Capital Cost Recovery Charge that includes for any Reporting Year during the permitted Cost Recovery Period a Capital Cost Recovery Charge that is greater than 200% of the Capital Cost Recovery Charge for any other Reporting Year." As the City may withhold its approval for the CCRC, this project should not be included

in the Capital Plan with an indication of "Funding" by CCRC. Funding through CCRC is reserved for approved MCIPs.

AD-S-5 Electrical Substations Replacements.

This is a previously approved MCIP and is underway.

AD-S-6 WWTP Disinfection Upgrade

The City's position on this project has not changed. Reference the section below from the *Allentown Division Preliminary 2017-2021 Capital Plan COA Response (9/1/2016)*⁵

The Project Detail Sheet notes that a study will be undertaken to investigate the alternatives to gaseous chlorine for disinfection. It is expected, that the study will look at alternatives, advantages and disadvantages, and related costs; however, until the study is received and reviewed it is assumed that the listed expense is just a placeholder.

The National Pollution Discharge Elimination System (NPDES) permit and the Operating Standards have requirements for fecal coliforms and chlorine residual. The gaseous chlorine system, although referenced as "outdated," has continually provided essentially one hundred percent (100%) compliance. It is assumed that LCA will accept all risks associated with a Notice of Violation of either or both the NPDES permit or the Operating Standards if a disinfection alternative is implemented.

If the project proceeds, consideration needs to be given to the impacts and integration of AO Phases: 1, 2, & 3, including blending if accepted by the United States Environmental Protection Agency (USEPA).

Lastly, this "Efficiency" designated MCIP will require a NPDES permit change. As the permit holder or a permit holder, Allentown's approval would be required.

The City will reserve further comments on this project until after the study is completed and reviewed.

In addressing the USEPA AO, the City has advised the USEPA and the Pennsylvania Department of Environmental Protection (PaDEP) that blending is the selected design option.

AD-S-11 Administrative Order Phase 1A WWTP Improvements

The AO Phase 1A projects are approved by the City. Approval and award of the contract for the detailed design is awaiting LCA Board approval so that the AO Plan of Action presented to the USEPA and the PaDEP can proceed per the commitment made to these regulatory agencies.

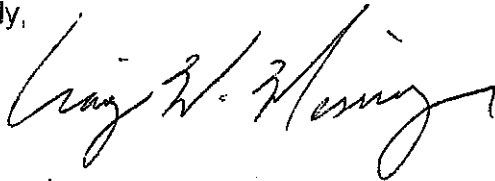
AD-S-16 WWTP Interim Blending Pumping System

The City's position on this project has not changed. This AO project is approved but is conditioned on the issuance of a new NPDES permit by the PaDEP which allows this project to proceed. The LCA Board previously approved this project in the 2016 and 2017 Allentown Division Capital Plans.

As prior practice, the City will anticipate LCA's response to these comments, after receipt of which the City will schedule a meeting, if necessary, to review the comments and positions of LCA and the City.

Thank you for providing your proposed program and for your continued cooperation. If you have any questions or require additional information, please do not hesitate to contact the Office of Compliance.

Sincerely,

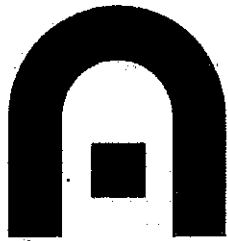


Craig Messinger
Interim Director of Public Works

CC: Brian Nagle, LCA Board of Directors
Liesel Gross, LCA
Ed Klein, LCA
Chuck Volk, LCA
Daniel Koplish, COA
Office of Compliance, COA

Attachments:

1. Allentown Division Preliminary, 2017-2021 Capital Plan response (9/1/2016 letter, attached with section highlighted)
2. Allentown Division, Preliminary 2017-2021 Capital Plan, LCA's 10/4/2016 Response to City Comment Letter (11/16/2016, attached)
3. RE: November 16, 2016 letter to Frank Leist requesting a copy of the current Emergency Response Plan (12/2/2016)
4. Allentown Division Proposed 2016-2020 Capital Plan Response (10/13/2015)
5. Allentown Division Preliminary 2017-2021 Capital Plan COA Response (9/1/2016)



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Attachment 1

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown PA 18103
610.437.7587
Fax 610.437.7614
craig.messinger@allentownpa.gov

September 1, 2016

Frank Leist
Chief Capital Works Officer
Lehigh County Authority
P.O. Box 3348
1053 Spruce Street
Allentown, PA 18106-0348

RE: Allentown Division, Preliminary 2017-2021 Capital Plan

Dear Mr. Leist,

Pursuant to Article 4 of the Concession and Lease Agreement, the City of Allentown (City) is responding to your letter of August 3, 2016 *Allentown Division: Preliminary 2017-2021 Capital Plan (2017 CP)*. The following responses and comments are on the Major Capital Improvement Projects (MCIP) and those projects that have a financial impact on either the City or City ratepayers.

Thank you for making the format changes to the Project Detail Sheet; it is much easier to review.

Comments on individual projects:

AD-W-7 Water Main Replacements – Lehigh County Authority's (LCA) use of exceedance credits (Operating Standards (OS) Sec.A.18.0) to meet the requirement of replacing a minimum of two (2) miles of distribution lines annually (OS Sec. A.6.19.2) for 2017 is accepted. Confirm that LCA is not planning a 2017 program and will be preparing a 2018 program. The description on the Project Detail Sheet contradicts the statement in the cover letter. Clarify which of the statements is correct.

AD-W-10 – WFP Emergency Power, Schantz and Crystal Springs – The Project Detail Sheet states, "This evaluation was completed in 2016 as part of the Water Filtration Plant Master Plan project [sic]. The Water System Master Plan (WSMP) is due to be completed later this year and the draft of the report is to be provided to the City for review and comment before being finalized. Consequently, the City cannot consider any meaningful comments on this proposed

project at this time. Since the City will not receive the WSMIP until after this 2017 CP is finalized and as the proposed project is not scheduled to begin until 2020, the City will review and comment on this MCIP as part of the 2018-2022 Preliminary Capital Plan (2018 CP) review process.

In the interim, the City requests information regarding the incoming power lines to the Water Filtration Plant (WFP); include dates, times, and durations of the power outages since LCA began operating the facility August 8, 2013.

In addition, the City has concerns with the evaluation criteria used in defense of this proposed project. Noted in the Project Detail Sheet, "The distribution system has only 3-4 days of storage if water cannot be pumped from the Plant." Based on this statement there is no need for this expenditure. It is extremely difficult to imagine that both incoming power sources would be down for that period. As a result of the major storms in 2013, PPL and the City initiated two maintenance programs to prevent disruption of the power supply to the WFP. PPL's Advanced Vegetation Management and the Hazard Tree Programs is responsible for the removal of the trees immediately around the power lines across from the Plant. The City cleared the remaining trees on north slope above the power lines to the ridge. Additionally, PPL's Vital and Critical Facility Programs identifies those facilities providing essential public health and safety functions for large numbers of people. These identified facilities include hospitals, county 911 centers, and certain water treatment plants, which would include Kline's Island Waste Water Treatment Plant (KIWWTP) and the WFP.

The City would like to know the basis of this project as it appears there is a lack of understanding of the system and its components. The City takes issue with LCA preemptively including MCIPs in its 2017 CP, which should be resultant from the required System Master Plans.

The City will reserve further comments on this project until after the study is completed, reviewed, and finalized.

AD-W-11 Schantz Spring Main Replacement & Leak Rehabilitation – This project is accepted and qualifies a Major Capital Improvement Project (MCIP); it will be the last project listed under Schedule 7 to begin.

AD-W-15 Itron/AMR Meter Project – This is an on-going *Uncompleted Work* project.

AD-W-16- Pre-Lease Valve Replacements – This is an *Uncompleted Work* project. Per your e-mail, *Pre-Lease Valve Replacement* dated August 11, 2016. We acknowledged and accept that the project has been delayed for approximately one (1) year and that all designated valve replacements will be completed in 2017. Additionally, per LCA's 2016 Capital Plan response letter dated November 24, 2015, "LCA acknowledges that there have been numerous e-mails confirming our agreement that allows the City to pay LCA overtime for the project cost, where said payments from the City will not exceed \$370,000 per/year. While we typically do not

include such detail in the Capital Plan documentation, we will include that in our next update of the Plan."

The City assumes the budget for this project will not be exceeded due to project's delay, please advise.

AD-W-21 Fixed Base Meter Reading System – It is appreciated that LCA has modified the timing for implementation of this project as suggested in the City's comments on LCA's 2016 Capital Plan.

Stated in *LCA's 2016 Capital Plan response letter dated November 24, 2015*, "We believe the City is overlooking system benefits that provide a justification for this project and will be happy to share that analysis upon its completion." Therefore, and in accordance with discussions last year, it is assumed that LCA will be conducting a study detailing the technical aspects and benefits to the ratepayers from the proposed project. Confirm that the \$30,000 expenditure listed for 2019 is to cover the cost of the study.

The City will reserve further comments on this project until after the study is completed and available for review.

AD-S-5 WWTP Electrical Substation Replacements – The Project Detail Sheet indicates that an evaluation study was completed in 2016. The City has not been provided a copy of that study and consequently cannot provide any comment. AD-S-4 indicates there is no work planned until 2018; therefore, LCA has time to provide a copy of the report for the City's review and comment. The City will review and comment on this MCIP as part of the 2018 CP review process.

If this project does proceed, the use of a singular engineer, consultant and/or contractor for both the AO projects and the Electrical Substation Replacement should be considered to provide financial benefit to the contributors to the KIWWTP through economies of scale. This approach would also facilitate coordination between the projects. The distribution of costs, although billed through separate mechanisms, would be based on sewage treatment allocations for both the MCIP and AO projects. Similarly, should the project go forward, consideration should be given to AO Phases 2 and 3 project power requirements. Moreover, should blending be the mode of treatment of extraneous sewage, consideration needs to be given to location of various system components in AO Phases 1, 2, and 3 as the physical area needed to incorporate all projects, including ancillary items such as piping, electrical service, and instrumentation is very limited.

The City will reserve further comments on this project until after the study is presented to the City for review.

AD-S-6 WWTP Disinfection Upgrade- The Project Detail Sheet notes that a study will be undertaken to investigate the alternatives to gaseous chlorine for disinfection. It is expected,

that the study will look at alternatives, advantages and disadvantages, and related costs; however, until the study is received and reviewed it is assumed that the listed expense is just a placeholder.

The National Pollution Discharge Elimination System (NPDES) permit and the Operating Standards have requirements for fecal coliforms and chlorine residual. The gaseous chlorine system, although referenced as "outdated," has continually provided essentially one hundred percent (100%) compliance. It is assumed that LCA will accept all risks associated with a Notice of Violation of either or both the NPDES permit or the Operating Standards if a disinfection alternative is implemented.

If the project proceeds, consideration needs to be given to the impacts and integration of AO Phases: 1, 2, & 3, including blending if accepted by EPA.

Lastly, this "Efficiency" designated MCIP will require a NPDES permit change. The City's, as the permit holder or a permit holder, approval would be required.

The City will reserve further comments on this project until after the study is completed and reviewed.

AD-S-7 – WWTP - Digester Cover Replacements – Project approved previously as a MCIP and underway.

AD-S-10 – Rehabilitation of Administrative Order Manholes – This project was previously approved as an AO Project. Manhole rehabilitation work in 2017 should essentially close out this project as all manholes that were historically identified as needing rehabilitation for I & I or identified by modelling in the *Phase 2 Corrective Action Plan Report, April 2016*. In the future, any individual manholes that are determined to be sanitary sewer overflow sites due to high flows will be addressed independently. These independent manhole rehabilitations would be undertaken by LCA and would be considered a reimbursable AO expenditure(s). Therefore, as it is anticipated that this project will be closed after 2017; there is no need for additional funding to appear in subsequent years.

AD-S-11- Administrative Order Phase 1A Improvements- The AO Phase 1A projects are approved by the City pending agreement from the United States Environmental Protection Agency (EPA). That approval is anticipated to be received in late 2016. If that is the case, it is expected that LCA will begin the process of securing necessary professional service agreements in January 2017. If the EPA rejects, in whole or in part, the currently proposed AO Phase 1A projects, the City and its consultants will advise LCA of a revised or new AO Phase 1A plan.

AD-S-12- WWTP - Security Upgrades - This Uncompleted Work project was previously approved and is underway. The *Infrastructure Survey Security & Resilience Report* prepared by the Department of Homeland Security (DHS) was received by the City on August 18, 2016. Based on our preliminary review, the City does not expect the costs for this project to exceed

the current budget, which was based on the project developed prior to and included in the Lease. The City awaits LCA's response to the report and will provide additional comments at that time.

AD-S-16 WWTP Interim Blending Pumping System – This AO project is approved but is conditioned on the issuance of a new NPDES permit by the Pennsylvania Department of Environmental Resources (PaDEP) which allows this project to proceed.

As prior practice, the City will anticipate LCA's response to these comments, after receipt of which the City will schedule a meeting, if necessary, to review the comments and positions of LCA and the City.

Thank you for providing your proposed program and for your continued cooperation. If you have any questions or require additional information, please do not hesitate to contact the Office of Compliance.

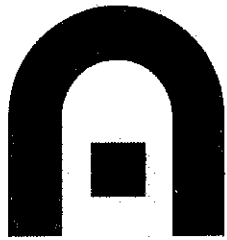
Sincerely,

A handwritten signature in black ink, appearing to read "Craig Messinger". The signature is fluid and cursive, with the first name "Craig" and last name "Messinger" clearly distinguishable.

Craig Messinger

Interim Director of Public Works

CC: Liesel Gross, Chief Executive Officer, Lehigh County Authority
Brian C. Nagle, Chair Lehigh County Authority Board of Directors
Dan Koplisch, Office of Compliance



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Attachment 2

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown PA 18103
610.437.7587
Fax 610.437.7614
craig.messinger@allentownpa.gov

November 16, 2016

Frank Leist
Chief Capital Works Officer
Lehigh County Authority
P.O. Box 3348
1053 Spruce Street
Allentown, PA 18106-0348

Re: Lehigh County Authority-Allentown Division
Preliminary 2017-2021 Capital Plan
LCA's 10/4/16 Response to City Comment Letter

Dear Mr. Leist,

The City agrees that a meeting is not necessary to discuss the 2017-2021 Allentown Division Capital Plan; however, the City is requesting that Lehigh County Authority (LCA) provide information which is indicated hereafter.

Serious concerns have been raised about the need and justification for Project AD-W-10 Emergency Power, Schantz and Crystal Spring. The City does not consider LCA's statements in its October 4, 2016 response letter to be nearly sufficient to support and justify the project. Several relevant factors and issues have not been addressed.

The following comments are provided to represent the City's position:

Statements in LCA's 10/4/2016 Response Letter to the City

"PADEP has advised us that neighboring large cities have 100% emergency backup power at their facilities."
Allentown has 100% backup power provided by the second independent incoming feed. The design of the last upgrade to the Water Filtration Plant (WFP) provided the second line specifically as a backup. The installation of a generator(s) provides a second backup which is extremely difficult to justify based on the fact that LCA has not experienced a single power outage with either incoming power source in the three plus years LCA has been operating the plant. Although the term "100%" is used in the statement, there is no such thing. A generator is a piece of equipment; it cannot be relied on 100% of the time. Equipment failures are common and expected which is the reason why redundant systems (a second incoming power source) and equipment are included in the design of all major treatment systems. What would make this generator(s) any different?

The reliability factor of a generator becomes even more of a concern in the future years of its forty year life span. In all likelihood, other than periodic start-ups as part of routine maintenance, the generator(s) would not have been in an on-line situation for many years.

"... there is no guarantee that incoming power can be supplied 100% of the time in the future." As noted above, no guarantee exists that a generator(s) will function properly 100% of the time. Is one to infer from the statement that a generator(s) will never fail during its forty year life span?

"... as mentioned in the Department of Homeland Security Infrastructure Survey (dated 7/8/16) for the Wastewater Treatment Plant, two separate electrical feeds entering at the same geographic location is considered a vulnerability for such facilities." "Such facilities" are wastewater treatment plants which function under a totally different set of conditions than water treatment facilities. At a wastewater treatment plant, sewage flows into the facility continuously; no options or modes of operation exist to provide treatment during loss of power. At the Klines Island Wastewater Treatment Plant, failure to accept all incoming sewage due to total loss of electric power will result in sanitary sewer overflows at Outfall 003 and throughout the collection system.

The WFP operates under a totally different set of procedures and practices which allow for operations to prepare for major storm events which are typically the cause of power outages. The WFP has several standard operating procedures (SOPs) such as topping off the 50 MGD finished water storage reservoirs, processing surface water raw water supplies until the raw water is not able to be treated, and pumping from Crystal and Schantz Springs until a loss of power occurs. The WFP does not have to be on-line continuously.

In the event of a total loss of power, as noted in the City's 9/1/16 letter, returning power to the WFP is a PPL priority. That aside, it is assumed that while LCA has been increasing its reliance on Allentown water and reducing well production, that LCA has been maintaining the operational capability of those wells similarly to the Lehigh River for use as an alternative water source. Therefore, LCA's Central System should get relief.

In addition to access to all media, social and public, LCA has the ability to telephone customers using the automatic dialing system to ask them to reduce consumption. If necessary, LCA can direct that water only be used for absolutely essential purposes until electric power is restored.

In summary, a host of options and procedures are available in the unlikely event of power loss from both incoming lines.

Schantz Spring

It seems as though LCA has not considered Schantz Spring in its analysis. Historically, major storms can result in increased turbidities in Schantz Spring. This situation occurs often enough that an SOP was created, which instructs operations staff to discontinue use of Schantz Spring when the turbidity level reaches a specified limit. It is highly probable that a storm with sufficient strength to have decommissioned both incoming power lines, would also cause Schantz Spring to be off-line. The value of a generator(s) would be significantly reduced as the 10-12 MGD output from the Schantz and Crystal Springs stated in the Capital Plan would be reduced to 4 MGD. This reduced output assumes that Crystal Spring is also not adversely impacted, in which case the value of the generator(s) is zero. It is also questionable whether LCA would want to utilize Crystal Spring without dilution of the PCE levels provided by other sources.

More importantly, because of the aforementioned situation with respect to changes in water quality in Schantz Spring, a possibility exists that Schantz Spring will be declared "Groundwater Under the Direct Influence (GUDI)" and require filtration. The potential for this designation is recognized to the extent that it is addressed in the Allentown-Lehigh County Authority Water Sales Agreement and is identified in the Lease Concession. Again, the value of a generator(s) to pump water from Schantz Spring would be zero and this would not be a storm specific situation; it would be a permanent condition.

Economic Considerations

Lastly and possibly the most critical element to consider relative to this proposed project is economics.

Starting with the smallest issue, the estimated annual maintenance cost is estimated to be one thousand dollars per year (\$1,000.00/yr.). In order to ensure a generator(s)'s reliability, proper operation and maintenance (O&M) would include starting up the system periodically and allowing it to run for a period of time. As LCA is looking for 100% reliability, the frequency would probably be monthly. As LCA allocates man hours to work performed, the associated man hours to open/close valves, start/stop equipment, monitor performance, etc. over the course of a year would be significant. Additionally, regular maintenance, such as oil changes and replacement of parts, will need to be undertaken. Given a forty year life expectancy, it can be expected that repairs and manufacturer's servicing will be necessary. While the cost of O&M is not significant compared to the \$1.736 M capital cost, it is a component of cost benefit analysis, life cycle costing, and return on investment which are economic variables typically considered with a capital project, particularly for one which is not mission critical.

Information available to the City indicated that two incidents of loss of power from both incoming power lines occurred in the twenty plus years since the last upgrade. Subsequent corrective actions were noted in the City's response letter to LCA's 2017-2021 *Preliminary Capital Plan*. The City was not able to find any documentation of a system wide advisory issued asking customers to conserve water during these instances. The City requests LCA provide this documentation.

For discussion purposes, let's assume a hypothetical situation that would occur every ten years but no corrective actions had been taken resultant of issues which occurred in the past. WFP operations will not have in mind that a major storm could knock out both sources of incoming power; yet in this scenario, both incoming feeds fail. The operators follow established SOPs, fill the finished water reservoirs and continue producing water while possible. LCA chooses not to engage any of the wells in the Central Division and elects not to issue a public advisory to conserve water. The water quality of Schantz Spring is not affected. Furthermore, LCA has not run any simulations on the hydraulic model to determine how valve settings within the distribution system might be modified to maximize water distribution during such an event. Finally, PPL takes a full day to restore one of the power sources to the WFP (a top priority facility).

What benefit would the generator(s) have provided? They would have provided about one half of an average day's water production. This volume could have been provided by the reservoirs which would still have adequate supply to provide system pressure and fire protection. The City contends that the development of this project did not factor the real value and benefit of the generator(s) versus the associated costs.

What is the cost benefit of AD-W-10? What is the life cycle cost of this project and justification for implementation? Again, the City's position is this is not a mission critical project. These are economic variables which LCA should be considering in developing the project.

LCA's Board has already raised the issue of Return on Investment (ROI) in its review of the Capital Plan. LCA staff advised the Board that a ROI cannot be done on every project in advance of presenting the plan and that projects included in the plan are required to ensure the sustainable operation of systems or to meet regulatory requirements.

If this project remains on the Capital Plan, the City would be obligated to advise the Board that the project is not a regulatory requirement, is not necessary to sustain system operations, and that the expected return on

investment, ignoring O&M costs, is the ability to produce 10-12 million gallons of water once every ten years for a cost of \$1.736M. This is not a very attractive ROI.

Lastly, it is assumed, based on the Capital Plan detail, that the generator(s) have a life expectancy of forty years. If, like most equipment, the realized life expectancy is only twenty years, then a similar Major Capital Improvement Project will be presented two more times over the course of the Lease.

Allentown Rate-Payer Responsibility

What appears to be a very telling sentence is the second and final sentence (one of only two sentences) in the Detailed Project Description, which states *"If the Plant loses power, LCA Central Division will not have water from the LCA/City interconnection."* This is a very curious inclusion. Why would this be an issue worthy of noting unless it was a critical consideration? On reflection, it comes to mind that the only parties really seriously impacted by the unplanned reduction of large volumes of water are the industries in LCA's Central Division which rely on a continuous supply of water to produce their products. It would probably take some time to mobilize and get wells up and running. Additionally, the water quality from the wells might differ from Allentown water. Both factors could create production issues.

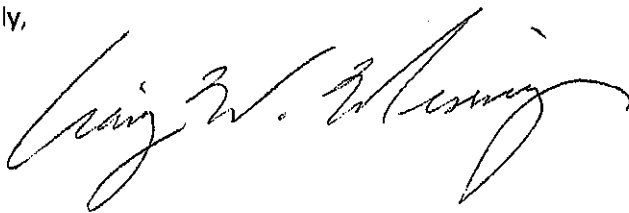
An obvious concern exists that Allentown rate payers and bulk water purchasers would in fact be paying for a project whose primary beneficiaries would be several industries. Perhaps the industries want to fund AD-W-10, in which case, the City's concerns vanish.

If LCA plans to continue to include AD-W-10 in its Capital Plan, the questions and issues raised in this letter will need to be considered.

The City is requesting a copy of the current Emergency Response Plan (ERP) required under Operating Standards Section A12.0. Please provide this information to the Office of Compliance.

Thank you for your cooperation.

Sincerely,



Craig Messinger

Interim Director of Public Works

CC: Liesel Gross, Chief Executive Officer, Lehigh County Authority
Edward C. Klein, Chief Financial Officer, Lehigh County Authority
Dan Koplisch, Consultant, City of Allentown
Office of Compliance, City of Allentown



LEHIGH COUNTY AUTHORITY

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

December 2, 2016

Attachment 3

Via e-mail to: craig.messinger@allentownpa.gov

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown, PA 18103

Re: November 16, 2016 letter to Frank Leist requesting a copy of the current Emergency Response Plan

Dear Mr. Messinger:

Lehigh County Authority (LCA) is in receipt of your letter to Frank Leist expressing concerns about the need for *Project AD-W-10 Emergency Power, Schantz and Crystal Spring* and requesting a copy of LCA's current Emergency Response Plan (ERP) which LCA is required to review, update, and maintain under Part A, Section 12.0 of the Operating Standards.

Because the ERP contains Protected Critical Infrastructure Information (PCII) as defined in the Critical Information Act of 2002 (CII Act), LCA safeguards and disseminates the ERP accordingly. As a requirement of the CII Act, LCA can provide access of the PCII to local government employees that demonstrate a valid need-to-know. The local government employee, as recipient of the CII must comply with the requirements stated in the CII Act regarding the handling of the PCII.

To eliminate the need for the execution of a Non-Disclosure Agreement and PCII user training, LCA proposes to allow the Office of Compliance to access the ERP during a review session at which LCA's Risk Manager will bring the ERP to the Water Filtration Plant conference room for the Office of Compliance to review.

Outside of CII compliance, LCA can provide a copy of the "WFP Transformer Explosion Prolonged Power Outage" *Tabletop Exercise After Action Report* dated November 5, 2015, which Scenario Design revealed the vulnerability of the City water supply in the event of the destruction of the Water Filtration Plant's on-site Transformer. Such an event was the basis for the development of Project AD-W-10.

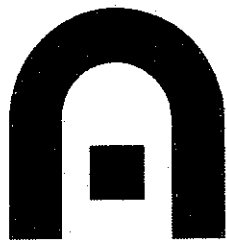
If this is acceptable, please notify me in writing (e-mail is sufficient). In the interest of moving this matter forward due to personnel availability around the Thanksgiving holiday, I have already reached out to the Office of Compliance which indicated that it would be amenable to this review session, which has been scheduled for December 16th at 9:00 am at the Water Filtration Plant.

Sincerely,

Jennifer Montero
Jennifer Montero
Contracts Administrator

Cc: Kevin German, LCA Risk Manager
Liesel Gross, LCA CEO
Office of Compliance (via e-mail) – City of Allentown

Every drop matters. Every customer counts.



Allentown
City without limits.

Attachment 4

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown PA 18103
610.437.7587
Fax 610.437.7614
craig.messinger@allentownpa.gov

October 13, 2015

Frank Leist
Chief Capital Works Officer
Lehigh County Authority
P.O. Box 3348
1053 Spruce Street
Allentown, PA 18106-0348

RE: Allentown Division, Proposed 2016-2020 Capital Plan

Dear Mr. Leist,

Pursuant to Article 4 of the Concession and Lease Agreement, the City of Allentown is responding to your letter of September 16, 2015 Allentown Division: Proposed 2016-2025 Capital Plan. Most of the comments are limited to capital projects, not previously approved or are in progress.

Debt Service line item in the Project Detail sheets

Several projects include a line item for "Debt Service", the numerical entry for which is carried out to the last place as compared to other line items which are typically expressed in the thousands of dollars. Please provide the variables, inputs, and specific formulas used in calculating the Debt Service entries. The City notes that Debt Service is listed for other projects not just those for which the City or Allentown ratepayers are financially responsible.

AD-W-13 Schantz Spring Chlorine Booster Station

If LCA has not already provided the information, please indicate when the testing to determine the need for the static mixer will be concluded and therefore when the project may be completed.

AD-W-16 Pre-Lease Valve Replacement

Per prior agreement, the City will be paying \$370,000 annually towards the completion of this project. The City requests that you note this agreement within the text of the Project Detail. Also request an explanation of the plans and time frames with locations (as soon as is available) for replacing/repairing the fifty-five valves. This request is in the spirit of both our organizations cooperative efforts to reduce the impact on businesses, citizens, and various community activities.

AD-W-18 Transmission Main Evaluation, Replacements, & Rehabilitation

The "Prior Years" expenditure coupled with the Project Description indicate that the leak detection studies are complete. The City would like to review the associated report(s) before providing further comment on this proposed project. Based strictly and solely on the one million dollar expense shown in the 2nd year (2017) this project would qualify as a Major Capital Improvement Project (MCIP). However, the City would like to review the report(s) prior to that determination. One particular question is whether the transmission mains evaluated are under the rating system utilized by your consulting engineer, Gannett Fleming.

AD-W-20 Badger Meter Replacements

Please refer to the comments on Project AD-W-21 Fixed Base Meter Reading Station, as AD-W-20 indicated being contingent upon the implementation of AD-W-21. In addition, the Capital Project AD-S-18 dispute will be proceeding to mediation and/or arbitration. The resultant determination may include aggregation, which will potentially influence whether this AD-W-20 will qualify as a MCIP.

AD-W-21- Fixed Base Meter Reading System

This City is strongly opposed to the development and implementation of this project within the time frames indicated. The Fixed Base Meter Reading Station (FBMRS) is not a mission critical project. There is no risk to water quality, water supply, personnel safety, nor are there regulatory requirements addressed. The project provides no real benefit to customers who would be paying the entire cost of the project. The only true beneficiary is LCA who would be paying nothing; yet would gain operational efficiencies and enjoy personnel and equipment savings. Further, the City has no report from LCA that the mobile collection system is malfunctioning; therefore, it is viable and providing satisfactory service to Allentown ratepayers. In several years from now, when the present mobile system has reached its life expectancy, this project will have merit. Therefore, due to the magnitude of the costs indicated, which will be borne solely by the ratepayers, this project is not acceptable under the time frames listed and is not in keeping with LCA's Mission Statement.

A lesser issue is that the data depository is indicated to be a part of this project. Does this mean that the data depository, which is currently a part of the AMR project, can be removed?

AD-S-14- Sanitary Sewer Manhole Lining

The intent of this project is to continue as long as the benefits are justifiable in concert with the EPA Administrative Order. Accessible manholes identified by the SSES, historical, or empirical evidence as needing remediation have been addressed or will be addressed in 2016. Beginning in 2017, manhole rehabilitation under this program will be based on LCA inspections using NASSCO ratings until those manholes, which would be expected to contribute appreciable Inflow & Infiltration, have been addressed.

AD-S-15 - Sanitary Sewer Manhole Collars and Water Tight Covers

Similar to the AD-S-14 project, this Capital Project will be based on LCA inspections. As the program funding is being discontinued after 2017, is it LCA's expectation that the manholes which typically surcharge to the point that the above ground portions of the manholes and manhole covers that might be adversely impacted will have been addressed at that point?

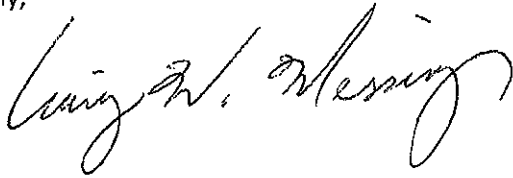
AD-S-18- Facility Roof Replacements (Water and Wastewater Facilities)

The qualification of this project as a MCIP is in dispute. Mediation and/or arbitration will be scheduled and a determination(s) rendered. Further City comment as might be appropriate will be made subsequent to the determination(s).

As prior practice, the City will anticipate LCA's response to these comments, after receipt of which the City will schedule a meeting, if necessary, to review the comments and positions of LCA and the City.

Thank you for providing your proposed program and for your continued cooperation. If you have any questions or require additional information, please do not hesitate to contact the Office of Compliance.

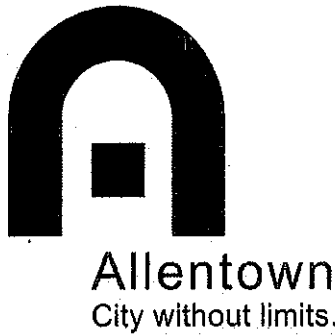
Sincerely,

A handwritten signature in black ink, appearing to read "Craig W. Messinger". The signature is fluid and cursive, with the first name "Craig" and last name "Messinger" clearly legible.

Craig Messinger

Interim Director of Public Works

CC: Aurel Arndt, Dan Koplisch, Office of Compliance



Attachment 5

Craig W. Messinger
Interim Director of Public Works
Department of Public Works
641 South Tenth Street
Allentown PA 18103
610.437.7587
Fax 610.437.7614
craig.messinger@allentownpa.gov

September 1, 2016

Frank Leist
Chief Capital Works Officer
Lehigh County Authority
P.O. Box 3348
1053 Spruce Street
Allentown, PA 18106-0348

RE: Allentown Division, Preliminary 2017-2021 Capital Plan

Dear Mr. Leist,

Pursuant to Article 4 of the Concession and Lease Agreement, the City of Allentown (City) is responding to your letter of August 3, 2016 *Allentown Division: Preliminary 2017-2021 Capital Plan (2017 CP)*. The following responses and comments are on the Major Capital Improvement Projects (MCIP) and those projects that have a financial impact on either the City or City ratepayers.

Thank you for making the format changes to the Project Detail Sheet; it is much easier to review.

Comments on individual projects:

AD-W-7 Water Main Replacements – Lehigh County Authority's (LCA) use of exceedance credits (Operating Standards (OS) Sec.A.18.0) to meet the requirement of replacing a minimum of two (2) miles of distribution lines annually (OS Sec. A.6.19.2) for 2017 is accepted. Confirm that LCA is not planning a 2017 program and will be preparing a 2018 program. The description on the Project Detail Sheet contradicts the statement in the cover letter. Clarify which of the statements is correct.

AD-W-10 – WFP Emergency Power, Schantz and Crystal Springs – The Project Detail Sheet states, "This evaluation was completed in 2016 as part of the Water Filtration Plant Master Plan project [sic]". The Water System Master Plan (WSMP) is due to be completed later this year and the draft of the report is to be provided to the City for review and comment before being finalized. Consequently, the City cannot consider any meaningful comments on this proposed

project at this time. Since the City will not receive the WSMP until after this 2017 CP is finalized and as the proposed project is not scheduled to begin until 2020, the City will review and comment on this MCIP as part of the 2018-2022 Preliminary Capital Plan (2018 CP) review process.

In the interim, the City requests information regarding the incoming powerlines to the Water Filtration Plant (WFP); include dates, times, and durations of the power outages since LCA began operating the facility August 8, 2013.

In addition, the City has concerns with the evaluation criteria used in defense of this proposed project. Noted in the Project Detail Sheet, "The distribution system has only 3-4 days of storage if water cannot be pumped from the Plant." Based on this statement there is no need for this expenditure. It is extremely difficult to imagine that both incoming power sources would be down for that period. As a result of the major storms in 2013, PPL and the City initiated two maintenance programs to prevent disruption of the power supply to the WFP. PPL's Advanced Vegetation Management and the Hazard Tree Programs is responsible for the removal of the trees immediately around the powerlines across from the Plant. The City cleared the remaining trees on north slope above the powerlines to the ridge. Additionally, PPL's Vital and Critical Facility Programs identifies those facilities providing essential public health and safety functions for large numbers of people. These identified facilities include hospitals, county 911 centers, and certain water treatment plants, which would include Kline's Island Waste Water Treatment Plant (KIWWTP) and the WFP.

The City would like to know the basis of this project as it appears there is a lack of understanding of the system and its components. The City takes issue with LCA preemptively including MCIPs in its 2017 CP, which should be resultant from the required System Master Plans.

The City will reserve further comments on this project until after the study is completed, reviewed, and finalized.

AD-W-11 Schantz Spring Main Replacement & Leak Rehabilitation – This project is accepted and qualifies a Major Capital Improvement Project (MCIP); it will be the last project listed under Schedule 7 to begin.

AD-W-15 Itron/AMR Meter Project – This is an on-going *Uncompleted Work* project.

AD-W-16- Pre-Lease Valve Replacements – This is an *Uncompleted Work* project. Per your e-mail, *Pre-Lease Valve Replacement dated August 11, 2016*. We acknowledged and accept that the project has been delayed for approximately one (1) year and that all designated valve replacements will be completed in 2017. Additionally, per LCA's 2016 Capital Plan response letter dated November 24, 2015, "LCA acknowledges that there have been numerous e-mails confirming our agreement that allows the City to pay LCA overtime for the project cost, where said payments from the City will not exceed \$370,000 per/year. While we typically do not

include such detail in the Capital Plan documentation, we will include that in our next update of the Plan."

The City assumes the budget for this project will not be exceeded due to project's delay, please advise.

AD-W-21 Fixed Base Meter Reading System – It is appreciated that LCA has modified the timing for implementation of this project as suggested in the City's comments on LCA's 2016 Capital Plan.

Stated in *LCA's 2016 Capital Plan response letter dated November 24, 2015*, "We believe the City is overlooking system benefits that provide a justification for this project and will be happy to share that analysis upon its completion." Therefore, and in accordance with discussions last year, it is assumed that LCA will be conducting a study detailing the technical aspects and benefits to the ratepayers from the proposed project. Confirm that the \$30,000 expenditure listed for 2019 is to cover the cost of the study.

The City will reserve further comments on this project until after the study is completed and available for review.

AD-S-5 WWTP Electrical Substation Replacements – The Project Detail Sheet indicates that an evaluation study was completed in 2016. The City has not been provided a copy of that study and consequently cannot provide any comment. AD-S-4 indicates there is no work planned until 2018; therefore, LCA has time to provide a copy of the report for the City's review and comment. The City will review and comment on this MCIP as part of the 2018 CP review process.

If this project does proceed, the use of a singular engineer, consultant and/or contractor for both the AO projects and the Electrical Substation Replacement should be considered to provide financial benefit to the contributors to the KIWWTP through economies of scale. This approach would also facilitate coordination between the projects. The distribution of costs, although billed through separate mechanisms, would be based on sewage treatment allocations for both the MCIP and AO projects. Similarly, should the project go forward, consideration should be given to AO Phases 2 and 3 project power requirements. Moreover, should blending be the mode of treatment of extraneous sewage, consideration needs to be given to location of various system components in AO Phases 1, 2, and 3 as the physical area needed to incorporate all projects, including ancillary items such as piping, electrical service, and instrumentation is very limited.

The City will reserve further comments on this project until after the study is presented to the City for review.

AD-S-6 WWTP Disinfection Upgrade- The Project Detail Sheet notes that a study will be undertaken to investigate the alternatives to gaseous chlorine for disinfection. It is expected,

that the study will look at alternatives, advantages and disadvantages, and related costs; however, until the study is received and reviewed it is assumed that the listed expense is just a placeholder.

The National Pollution Discharge Elimination System (NPDES) permit and the Operating Standards have requirements for fecal coliforms and chlorine residual. The gaseous chlorine system, although referenced as "outdated," has continually provided essentially one hundred percent (100%) compliance. It is assumed that LCA will accept all risks associated with a Notice of Violation of either or both the NPDES permit or the Operating Standards if a disinfection alternative is implemented.

If the project proceeds, consideration needs to be given to the impacts and integration of AO Phases: 1, 2, & 3, including blending if accepted by EPA.

Lastly, this "Efficiency" designated MCIP will require a NPDES permit change. The City's, as the permit holder or a permit holder, approval would be required.

The City will reserve further comments on this project until after the study is completed and reviewed.

AD-S-7 – WWTP - Digester Cover Replacements – Project approved previously as a MCIP and underway.

AD-S-10 – Rehabilitation of Administrative Order Manholes – This project was previously approved as an AO Project. Manhole rehabilitation work in 2017 should essentially close out this project as all manholes that were historically identified as needing rehabilitation for I & I or identified by modelling in the *Phase 2 Corrective Action Plan Report, April 2016*. In the future, any individual manholes that are determined to be sanitary sewer overflow sites due to high flows will be addressed independently. These independent manhole rehabilitations would be undertaken by LCA and would be considered a reimbursable AO expenditure(s). Therefore, as it is anticipated that this project will be closed after 2017; there is no need for additional funding to appear in subsequent years.

AD-S-11- Administrative Order Phase 1A Improvements- The AO Phase 1A projects are approved by the City pending agreement from the United States Environmental Protection Agency (EPA). That approval is anticipated to be received in late 2016. If that is the case, it is expected that LCA will begin the process of securing necessary professional service agreements in January 2017. If the EPA rejects, in whole or in part, the currently proposed AO Phase 1A projects, the City and its consultants will advise LCA of a revised or new AO Phase 1A plan.

AD-S-12- WWTP - Security Upgrades - This Uncompleted Work project was previously approved and is underway. The *Infrastructure Survey Security & Resilience Report* prepared by the Department of Homeland Security (DHS) was received by the City on August 18, 2016. Based on our preliminary review, the City does not expect the costs for this project to exceed

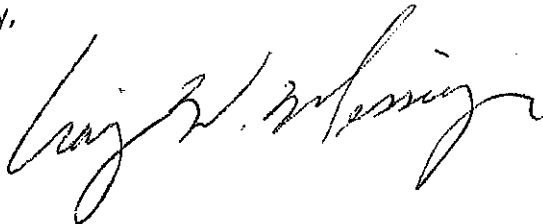
the current budget, which was based on the project developed prior to and included in the Lease. The City awaits LCA's response to the report and will provide additional comments at that time.

AD-S-16 WWTP Interim Blending Pumping System – This AO project is approved but is conditioned on the issuance of a new NPDES permit by the Pennsylvania Department of Environmental Resources (PaDEP) which allows this project to proceed.

As prior practice, the City will anticipate LCA's response to these comments, after receipt of which the City will schedule a meeting, if necessary, to review the comments and positions of LCA and the City.

Thank you for providing your proposed program and for your continued cooperation. If you have any questions or require additional information, please do not hesitate to contact the Office of Compliance.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig H. Messinger". The signature is fluid and cursive, with the first name "Craig" being the most prominent.

Craig Messinger

Interim Director of Public Works

CC: Liesel Gross, Chief Executive Officer, Lehigh County Authority
Brian C. Nagle, Chair Lehigh County Authority Board of Directors
Dan Koplish, Office of Compliance