



LEHIGH COUNTY AUTHORITY

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Agendas & Minutes Posted:
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BOARD MEETING AGENDA – September 13, 2021 – 12:00 p.m.

In-Person or Virtual Meeting Attendance Options Available: Meetings of the LCA Board of Directors will be held at LCA's Main Office as well as online using the Zoom Meetings application, which includes a telephone option. Public participation is welcomed both in-person or virtually. Instructions for joining the meeting online or by phone are posted on the LCA website in the morning on the day of the meeting, prior to the start of each meeting. You may also issue comment to LCA via email to LCABoard@lehighcountyauthority.org in advance of any meeting or view the meeting at a later time by visiting the LCA website. Please visit <https://www.lehighcountyauthority.org/about/lca-board-meeting-videos/> for specific instructions to join the meeting if you are attending virtually. If attending in-person at LCA's Main Office, please follow all safety and sanitation protocols posted.

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

- Additions to Agenda (vote required if action will be taken)

3. Approval of Minutes

- *August 23, 2021 Board meeting minutes*

4. Public Comments

5. Action / Discussion Items:

FINANCE AND ADMINISTRATION

- *Preliminary 2022 Budget Review (Discussion)*

WATER

WASTEWATER

- *Suburban Division – Miscellaneous Act 537 Plan Updates (Discussion)*

6. Monthly Project Updates / Information Items (1st Board meeting per month) – **September 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		
September 27, 2021	October 11, 2021	October 25, 2021

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

August 23, 2021

The Regular Meeting of the Lehigh County Authority Board of Directors was called to order at 12:00 p.m. on Monday, August 23, 2021, Chairman Brian Nagle presiding. The meeting was hybrid via in-person and video and audio advanced communication technology ("ACT"), using the Zoom internet application, including telephone option. Each Board member and other attendees of the meeting were able to hear each other attendee and be heard by each other attendee. The public could also participate in the meeting in-person or via ACT, using the Zoom internet application, including telephone option. A Roll Call of Board members present was taken. Chairman Brian Nagle, Richard Bohner, Norma Cusick, Linda Rosenfeld, Jeff Morgan, and Amir Famili were present for the duration of the meeting. Ted Lyons, Kevin Baker, and Scott Bieber joined the meeting shortly after it began and were present for the duration of the meeting.

Solicitor Michael Gaul of KingSpry was present along with Authority Staff, Liesel Gross, Ed Klein, John Parsons, Chris Moughan, Chuck Volk, Susan Sampson, Andrew Moore, Phil DePoe, and Lisa Miller. Matthew Tranter from KingSpry was also present via zoom regarding the Readington Farms item on the agenda.

Chairman Nagle stated that the meeting is hybrid and if anyone cannot hear or cannot be heard, they should let it be known. He also stated that the Board received their electronic and hard copy of the Board packet in advance and asked if anyone did not receive their copy of the packet. A copy of the packet is also available online.

REVIEW OF AGENDA

Liesel Gross noted the new bullet item that was added under Review of the Agenda entitled "Additions to the Agenda" which will be discussed further under the Finance and Administration item, Act 65 of 2021 Review of the Sunshine Law Update. Otherwise, there are no changes to the agenda. There will be an Executive Session regarding potential litigation which is scheduled to follow the regular meeting.

APPROVAL OF MINUTES

July 26, 2021 Meeting Minutes

On a motion by Richard Bohner, seconded by Amir Famili, the Board approved the minutes of the July 26, 2021 Board meeting as written (7-0).

PUBLIC COMMENTS

None.

ACTION AND DISCUSSION ITEMS

Act 65 of 2021 – Review of Sunshine Law Update

Liesel Gross explained the update to the Sunshine Law, specifically the change regarding how any changes to the public Board meeting agenda are to occur. If an item is not on the agenda but requires deliberation or action by the Board, there must be a formal vote of the Board at the meeting to add the item and then within 24 hours after the meeting, the updated agenda must be published. The law also requires meeting agenda's be posted on the organization's website 24 hours in

advance of the meeting. The Authority is currently posting the agenda on its website well ahead of this requirement and also has copies of the agenda available to anyone in attendance of the meeting. Solicitor Mike Gaul commented that the changes represent good practice, which the Authority is already doing. Solicitor Gaul reiterated the process of changing the agenda and also noted the exemptions to this would be if there is emergency business that involves a clear and present danger to life or property and business arising within 24-hours and be de minimis in nature.

Chairman Nagle thanked Lisa Miller for always getting the packet out to the Board a week in advance to give them ample time to review the information.

Readington Farms – Developer Cost-Sharing & Water System Contribution Agreement (Approval)

Liesel Gross introduced Matt Tranter from KingSpry who has been working with Chuck Volk regarding the Readington Farms development in Upper Macungie Township that requires a water system extension and pump station as described and discussed at a previous meeting. Chuck Volk stated that the developer will be paying for one-third of the pump station cost based on their proportionate share of the capacity. The developer will also pay all costs associated with the water system main extension that will run under I-78 to the pump station location.

Matt Tranter of KingSpry described the proposed cost-sharing agreement stating that the developer, Readington Farms, will be purchasing property from Jaindl Farms and will require services from the Authority. The table on page 3 of the agreement sets forth the estimated amount of funds that will come from both the developer and the Authority. The agreement is contingent upon the Authority acquiring the necessary easements to construct the pump station and main extension.

Chairman Nagle asked to see Exhibit C which describes in more detail the estimated costs for the project. Ms. Gross provided a previous detailed version of the exhibit noting that costs have been updated and that the current estimates are in the agreement. However, the final actual cost of the project will serve as the basis of the actual cost-sharing amounts to be paid by the Authority and the developer upon completion of the project. Kevin Baker asked how the Authority captures the additional capital costs associated with the project that are not included in this agreement. Ms. Gross said that the developer will pay their designated portion of the capital costs upfront as a lump sum payment. Over time, through the customer's payment of current rates, the remainder of the projects costs will be captured as well. A prior net-present-value analysis indicated that the payback period for this project is approximately seven years.

Scott Bieber asked who owns the land where the pump station will be located and who is responsible for acquiring the land. Matt Tranter explained that the land where the pump station will be built is owned by Jaindl Land Co. and an easement will be acquired by the Authority to construct the pump station. Chuck Volk also explained that a permanent easement is preferred, instead of an acquisition of the land, so that all the zoning requirements can be met. He also noted that PPL Electric Utilities will be constructing a substation to the east of where the pump station will be located, which will result in the Authority acquiring shared access to the pump station location.

Liesel Gross said that Staff is asking for approval of the agreement which will help the project move forward on an expedited basis. Approval would be conditioned upon Readington Farms completing their review of the agreement and incorporation of any final changes into the agreement.

On a motion by Linda Rosenfeld, seconded by Ted Lyons, the Board approved the Readington Farms developer contribution agreement in substantially the same form presented and authorizing

the Chief Executive Officer to execute the agreement with such incidental changes as she deems necessary and convenient and upon review by the Authority solicitor. (9-0)

A roll call vote was taken with the following votes cast:

Brian Nagle – yes
Scott Bieber – yes
Richard Bohner – yes
Norma Cusick – yes
Ted Lyons – yes
Kevin Baker – yes
Linda Rosenfeld – yes
Jeff Morgan – yes
Amir Famili – yes

MONTHLY FINANCIAL REVIEW

Ed Klein reviewed the July 2021 financial statement presentation, highlighting the variances between actual expenses and budgeted or forecasted expenses. Mr. Klein reported there is positive income and positive variances across all funds.

MONTHLY SYSTEMS OPERATIONS OVERVIEW

John Parsons reviewed the July 2021 Monthly Systems Overview report, highlighting items of interest on the report. There was an Emergency Declaration that occurred at the Wynnewood Collection system in late July. The pump station had mechanical failures resulting in the replacement of all piping, valving, check valving and pumps at a cost of \$48,000.00. Mr. Parsons also reported on the Notice of Violation (NOV) received from the Pa. Department of Environmental Protection (DEP) for permit violations over a period of time at the Arcadia Wastewater Treatment Plant. The plant treats mostly warehouses and the low-flow conditions and varying waste strength has been challenging for the plant to treat. At times, the plant has difficulty treating the waste due to the low temperature of the incoming waste. In recent years, the plant was upgraded with additional insulation and heaters to increase or maintain the incoming wastewater temperature. These upgrades have helped to address some of the violations noted in the NOV, and the Authority continues to address the violations. The Authority has not received any fines from DEP in relation to this NOV.

Scott Bieber asked if there was discussion on building a new Arcadia Wastewater Treatment Plant. Mr. Parsons stated that a new plant it was rebuilt in 2016 and the upgrades noted previously were completed in 2018.

Chairman Nagle asked if the quality of the inflow has changed that would cause the plant to not perform properly. Andrew Moore stated that the incoming wastewater is highly variable. This is a small system made up primarily of warehouse businesses, so the incoming waste is very different from normal domestic wastewater. The Authority is working on developing additional monitoring and process control protocols to assist with plant performance and address the ongoing challenges at this facility.

STAFF COMMENTS

Liesel Gross informed the Board about a potential project which involves a small sewer system in North and South Whitehall Townships. The Parkland School District has a small system in South Whitehall Township that needs significant rehabilitation. There is a potential for development nearby in North Whitehall Township that will also need wastewater service in the future. The Authority has been approached about assisting with developing a solution for these needs. The Pa. Department of Environmental Protection (DEP) has specified that they want the Authority to own and operate the facility in the future. Scott Bieber asked if North Whitehall Township has mentioned the failing sewer systems in that area. Ms. Gross said they have mentioned it, and DEP has suggested a sewage facilities plan be developed to define the service area for this small wastewater treatment plant.

Linda Rosenfeld left the meeting at 1:04 p.m.

Chairman Nagle commented that he would want the system built to our standards so we can avoid potential problems. Ms. Gross said the Authority's involvement would be contingent upon the treatment plant being designed and constructed in accordance with Authority specifications.

SOLICITOR'S COMMENTS

None.

PUBLIC COMMENTS / OTHER COMMENTS

None.

EXECUTIVE SESSION

An executive session will be held after the regular meeting to discuss matters of potential litigation.

ADJOURNMENT

There being no further business, the Chairman adjourned the meeting at 1:05 p.m.

Richard Bohner
Secretary

FINANCE & ADMINISTRATION

ACTION ITEMS

DISCUSSION ITEMS

1. Preliminary Budget Review – September 13 & 27, 2021

Staff will present the budget timeline, key assumptions, strategic initiatives, and economic factors that will be included in the 2022 budget on September 13. At the meeting on September 27, a preliminary budget will be presented for Board review. Additional details will be presented and discussed in October, with Board adoption expected by the end of October 2021.

2. Strategic Plan Update – September 27 or October 11, 2021

Since April 2021, LCA has been working on preparing an updated Strategic Plan and incorporating feedback from employees, key stakeholders, and the Board of Directors. The work has been facilitated by Raftelis and progress continues on the development of updated mission and vision statements, along with strategic priorities, measures, and implementation plans. At an upcoming Board meeting, an update on this work will be provided.

INFORMATION ITEMS

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

CERTIFICATES OF DEPOSIT						
25-Aug-21			Gross	Date of	Date	Net Rate
Fund	Bank	Location	Amount	Purchase	Due	%
LLRI CR	Sallie Mae Bank	Salt Lake City, UT	245,000.00	8/18/21	8/18/23	0.350

- 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

Developments

Water system construction is occurring in the following developments:

- 5420 Crackersport Road, 1 commercial lot, UMT
- 8323/8449 Congdon Hill Drive, 2 industrial lots with warehouses, LMT
- Fields at Indian Creek, Phases 4 & 5, 86 residential units (sfd), water and sewer, UMiIT & Emmaus
- Kohler Tract, 123 residential lots (sfa), water and sewer, UMiIT
- Lehigh Hills, Lot 5 Phase 2, 240 residential units (sfd.), UMT
- Lehigh Hills Townhouses, 24 townhouse units (sfa), UMT
- Mountain View Estates, 27 residential units (sfd), LMT
- Shepherds Corner, 1 commercial lot, LMT

Water system plans are being reviewed for the following developments:

- 749 Route 100, 1 industrial lot with warehouse, UMT

5329-5347-5357 Hamilton Blvd., 1 commercial lot, LMT
ABE Doors & Windows Redevelopment, 1 commercial lot, LMT
ATAS International, 1 industrial lot, UMT
Estates at Maple Ridge, 30 residential units (sfd), UMiIT
Glenlivet Drive West Extension & Subdivision, 52 residential units (sfd), UMT – New
Green Hills Commerce Center III, 1 commercial lot, UMT - New
Laurel Field, Phase 5, 25 townhouses, UMT
Madison Village at Penn's View, 66 manufactured homes, 1 lot, water and sewer, LynnT
Mertztown Residential Subdivision, 264 sf units & 136 townhouse units, LMT
Mosser Road Subdivision, 10 sf units, UMT
Parkland Crossing (formerly 1224 Weilers Rd Twins), 144 townhouse units, UMT
Readington Farms – 1 industrial lot, UMT - New
Ridings at Parkland – Phase 2, 38 residential units (sfd), NWT
Sauerkraut Lane Extension – Roadway & water line extension, LMT
Self-Storage Facility – Cedarbrook Road – 1 Commercial Lot, LMT
Schoeneck Road, Lot 1, 1 lot warehouse, LMT
Sheetz – Cetronia Road, 1 commercial lot, UMT
The Annex at Fields at Indian Creek, 22 S.F. residential units, Emmaus Borough
Towneplace Suites by Marriott, 91-room hotel, UMT
West Hills Business Center-Bldg H – 1 Commercial Lot, Weisenberg T

Sewage Facilities Planning Modules Reviewed in Prior Month:

Hidden Meadows, Phase 3, UMT, 4,460 gpd.
The Townes at Schaefer Run - North, West & South Sections, UMT, 28,544 gpd.
Project Elsie, UMT, 251,500 gpd.
Mertztown Residential Subdivision, LMT, 89,200 gpd.

WATER

ACTION ITEMS

DISCUSSION ITEMS

INFORMATION ITEMS

1. **Allentown Division – Water Filtration Plant: High Lift Pump VFD Replacements**

The High Service Pumping System (HSPS) at the WFP is the primary means of conveying treated water into the distribution system. The HSPS has experienced regular failures from aging electrical components in recent years. The July 2017 Allentown Water Master Plan categorizes the pump variable frequency drives (VFDs) in very poor condition and notes that the VFDs are no longer supported by the manufacturer. This project will replace two of the existing VFDs and add a third VFD to the constant speed pump. Design phase was completed in late 2020. LCA submitted a funding application and supporting documentation to PennVEST in early November 2020, which was approved in January 2021. Construction phase of the project was approved at the 3/22/2021 Board meeting. In May 2021, PennVEST granted consent to proceed with construction prior to closing on the loan, which will follow completion of construction in 2022. Notices to Proceed have been issued for both contracts and construction phase is in progress. **(No Change)**

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

The project features 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. Costs are being shared between the LCA Suburban Division and the developer of the Kohler Tract (Jasper Ridge). Pumping station bids were opened on 4/25/19. Board approval for the construction phase of the project was granted at the 5/13/19 meeting and a preconstruction meeting was held on 6/25/19. The NPDES permit was issued on 3/9/20 and a premobilization teleconference was held on 3/19/20. As of April 2021, construction is more than 96% complete. The contractors are addressing the remaining punch list items. The station went on-line on 11/19/20. **(No Change)**

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

The project involves construction of 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 AI Guiseppe (SSM, Inc.) in 2017. Project update meetings with SSM and USGS will be conducted in May and July 2021. **(No Change)**

4. **Suburban Division – Buss Acres Pump Station Replacement Construction**

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 accommodate the future installation of additional radon removal equipment, to be implemented upon DEP's mandate of a regulatory limit. The project is in construction phase. The Notice to Proceed was issued to the contractors on 9/24/19. Construction began in February 2020 and is approximately 95% complete. Equipment delivery delays from the pre-cast building manufacturer have slowed the progress of this project. The new station, the finished water reservoir and Gary well are online. The Laurie well upgrade will be completed in August followed by demolition of the old facilities and restoration of both sites.

5. **Suburban Division – Water Meter Reading Equipment Upgrade**

LCA's capital program includes the replacement of 20,000 transceiver units, and 10,000 units will be replaced 2019 with the remaining to be replaced in 2020 under separate authorization. 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 100% of the remaining old style radio units over a two-year period. Construction phase services for the first round of 10,000 units was approved at the 5/13/19 Board meeting. Construction began in July 2019 and a change order was issued to the contractor for the installation of the remaining transceiver units that were originally scheduled for replacement in 2020, in order to expedite the completion of the work under the program and take advantage of favorable contract unit pricing. The project is in final closeout. **(No Change)**

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

This Project focuses on the development of an additional well for the Madison Park North (MPN) system per DEP guidelines to have a backup source of water supply. An agreement is in place with an adjoining property owner to MPN to drill a test well on their property. The "step drawdown test" was performed on 3/26/19 and indicated that the test well is a viable backup source to Well 1. A Pre-Drilling and Aquifer Test Plan was approved by DEP in late September of 2019. Authorization was granted at the June 22 Board meeting for aquifer testing of the proposed well as per the combined Pre-Drilling and Aquifer Test Plan. Well testing was performed in August in coordination with LCA's engineer. Testing was halted upon discovery of a water bearing zone blocked by casing pipe grouting. A second test well location has been identified on the same property and well drilling has been completed with positive results. Test Well 2 is more productive than the existing source for the system (Well 1). A sustained aquifer test of Well 2 was performed in March; however, an unpredicted heavy rainfall event invalidated the test. The second aquifer test was completed in July 2021. The second test results were presented to DEP who determined that the well was not approvable.

7. **Allentown Division – 36" DI Water Main Condition Assessment**

Water distribution system consultant Gannett Fleming, Inc is working with Pure Technologies to develop a condition assessment project focusing on the 36" ductile iron transmission line that feeds the north end of Allentown and Huckleberry Ridge Reservoir. This line has had two recent major failures and it would be beneficial to determine if there is a root cause for these failures that can be corrected to prevent further damage and water loss. The work was performed on December 14-15, 2020. A draft report is in-hand and LCA is working with the contractor towards finalization. Final report is expected in August/September. (No Change)

8. **Suburban Division – Fixed Base Meter Reading Stations**

The project focuses on securing land development and zoning approvals to construct eight fixed base water meter reading stations located throughout the Suburban Division water service area. The land development and zoning approvals will allow for the future construction of the stations as part a program to transition to a centralized advanced metering infrastructure system which will provide more consistent, timely and accurate billing to the customers. LCA will conduct additional investigatory work to refine construction costs and identify all zoning restrictions and limitations with the prospective tower sites, and present that information to the Board at a future date. **(No Change)**

9. **Allentown Division – Water Main Replacement Program Cycle 5**

The project is for the annual replacement of aged and/or failing cast iron water mains in multiple locations throughout the City, in accordance with the new amended lease requirements (one mile per year), based on the design engineer's risk prioritization protocol. The design engineer (Gannett Fleming) halted work on Cycle 5 in 2019 following City Compliance office acceptance of the Cycle 5 main replacement prioritization, pending available funding. LCA restarted Cycle 5 design phase for construction in 2021 of a water main replacement project. As of November 2020, LCA began the process of negotiations for cost sharing agreement with the City for road

surface restoration. In December 2020 LCA formally submitted the substantially complete plans and specifications to the City for approval, and City comments were reviewed on January 19, 2021. The project was advertised for bid on March 1, 2021, pre-bid meeting was held on March 17, 2021, and bids opened on March 31, 2021. The Board authorized the construction phase of this project at the April 12, 2021 LCA Board meeting. As of July 19, 2021, construction work commenced with anticipated completion by early October 2021. (No Change)

10. **Allentown Division – Water Filtration Plant: 2021 Indenture Upgrades – Construction Phase**

As a condition of the financing of LCA's up-front concession payment to the City, LCA entered into a Trust Indenture with the Manufacturers and Traders Trust Company that requires the preparation of an annual Consulting Engineer's Report (Report). The Report, which is prepared each year by Arcadis, documents the condition of the water and wastewater facilities (KIWWTP and WFP) based on physical inspections by the engineer, identifies repairs and upgrades required, and reflects progress made in addressing deficiencies. This project consists of addressing structural deficiencies at the Water Filtration Plant, with work located at various concrete structures in exterior areas. D'Huy Engineering completed design in February 2021, the project was advertised for bid in late March 2021, and bids were opened on April 22, 2021. Award of bids and construction phase authorization was granted at the May 10, 2021 LCA Board meeting. Construction has commenced and will be completed in Fall 2021. (No Change)

11. **Suburban Division – Arcadia West Water Storage Tank Replacement - Construction Phase Authorization**

The Arcadia West water storage tank has had several leaks in recent years and the coating system has reached the end of its useful life. A condition assessment study was done in 2019 which determined that the most cost-effective solution is to replace the aging tank with a new concrete tank. This project is for the replacement of the existing steel tank with a new tank of the same size, demolition of the existing tank, and miscellaneous yard piping and site work. Entech Engineering completed design in March 2021, the project was advertised for bid in late March 2021, and bids were opened on April 22, 2021. A Notice of Award was issued to the contractor following approval at the May 10, 2021 LCA Board meeting and the Notice to Proceed was issued in June 2021. Construction began in mid-August.

12. **Suburban Division – Upper System Pump Station and Main Extension Design - Phase**

Based on current and future demand for water service in the Upper System portion of the Central Lehigh Division, LCA's water system engineer, Gannett Fleming, has run various scenarios in the hydraulic model to simulate the impacts of this expected growth. The preferred alternative to increase water capacity and system resiliency in the Upper System is a system extension under Interstate-78 just west of Fogelsville and a new water booster station, which will supplement existing well supplies and pumping capacity in this area of the water system. Due to the near-term requirements of an industrial development slated to be constructed within the next two years in this area, the project will need to move forward immediately. A Request for Proposals was issued to three pre-qualified engineering firms for design of the Upper System pump station and main extension. Capital Works reviewed the proposals and board approval of design phase was granted at the 7/26/21 board meeting. Design phase is in progress.

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

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

Allentown lease, and it also needs to be updated every 5 years throughout the life of the lease. The first Master Plan was prepared in 2017. Request for proposals for this Master Plan (due) in 2022 will be released in the fourth quarter of 2021, with Board authorization requested in November or December. The project will be funded by the LCA Allentown Division.

WASTEWATER

ACTION ITEMS

1. **Suburban Division – Heidelberg Heights 2021 and 2022 Sanitary Sewer Replacement Project – Construction Phase Authorization – September 27, 2021**

In accordance with the Consent Order and Agreement (CO&A) executed by LCA and DEP, LCA is required to complete annual inflow and infiltration mitigation projects to eliminate hydraulic overloads and bypass events at the Heidelberg Heights wastewater treatment plant. The CO&A requires that all original vitrified clay sewer main and lateral pipe be replaced within five years. The 2021 sewer replacement project bids were opened on 3/31/2021. Only two bids were received, both of which significantly exceeded the engineer's estimate. The Board approved rejection of bids at the 4/26/2021 Board meeting. The project scope was expanded to include the 2022 required sewer main replacement, in order to gain economy of scale and attract more bidders. The expanded project was advertised for bid on 8/24/2021, and bids were opened on 9/15/2021. Construction phase authorization will be requested at the 9/27/2021 Board meeting.

DISCUSSION ITEMS

1. **Suburban Division – Miscellaneous Act 537 Plan Updates – September 13, 2021**

Following several months of discussion with the Pennsylvania Department of Environmental Protection (PA-DEP), all municipalities flowing into the Kline's Island Wastewater Treatment Plant submitted an Interim Act 537 Plan ("Interim Plan") on September 4, 2020. This Interim Plan primarily consisted of projecting new connections to the regional sewer system from 2021 through 2025 and outlining steps to be taken during this timeframe to prepare a long-term Regional Act 537 Plan ("Regional Plan"). DEP granted approval of the Interim Act 537 Plan on 6/25/2021. At the September 13, 2021 Board meeting, LCA staff will provide an update on the status of Regional Act 537 planning, specifically on items related to the Pretreatment Plant Upgrade Option and a brief review of the Revenue Planning Tool.

INFORMATION ITEMS

1. **Regional Act 537 Plan Alternatives Analysis: Pretreatment Plant Upgrade Option**

To begin the process of developing the long-term Regional Act 537 Plan, the evaluation of the LCA Pretreatment Plant Alternatives was identified as an immediate need to assist with completing the full alternatives analysis to be completed within the next five years. The alternative to upgrade the Pretreatment Plant to full treatment was previously evaluated in the 2011-2016 timeframe. Additional study is required to fully evaluate the facility's capacity to treat current and future dry-day, wet-weather, and peak flows. To complete this evaluation, LCA staff has received proposals for two engineering firms that will serve in Program Manager and Technical Lead roles. The Program Manager will oversee all alternatives being evaluated at both the Pretreatment Plant and Kline's Island Wastewater Treatment Plan in Allentown as the Act 537 Plan is being developed. The Technical Lead will provide specific engineering and treatment plant modeling services to support evaluation of the Pretreatment Plant alternatives. Board approval for these professional services authorizations was granted at the 8/24/2020 meeting. A preliminary report is expected in September 2021. Internal presentations occurred in August and a summary of results to be provided to the Board in September.

2. **Suburban Division – Western Lehigh Service Area: Revenue Planning Tool**

As part of the long-term Act 537 planning process, a revenue planning tool is required to help predict the impact of proposed system modifications in the Western Lehigh Service Area. This

tool will simulate financial impacts based on current and future flows and loads and utilizing the terms of existing inter-municipal agreements. For the alternatives being evaluated by LCA's engineering consultants for potential upgrade of the Pretreatment Plant to full treatment, the revenue planning tool will simulate changes in future flows and loads and general financial analyses to assist with decision-making regarding these alternatives. Prior phases of this work were completed in 2019 and 2020 to review the assumptions and parameters required to develop the financial model. Authorization for Phase 2 (development of the actual revenue planning tool) was approved at the 12/14/2020 Board Meeting. Final tool delivery occurred in July 2021 with additional staff evaluation of the results occurring in August. A summary of this work will be provided to the Board in September.

3. Suburban Division – Western Lehigh Service Area: 2020 Sewer Modeling

The Western Lehigh Sewer Partnership (WLSP) hydraulic model has been calibrated using 2019 flow meter and rainfall data and is available to support long-term Act 537 planning for the Western Lehigh Interceptor (WLI). Five separate modeling tasks will be performed in order to facilitate broader Kline's Island Sewer System (KISS) planning need discussions. The results of this 2020 modeling will help to inform further future modeling decisions and alternative analyses that will occur during the full KISS model calibration period in 2022. A consulting engineer has been retained and full authorization was granted at the 5/11/2020 Board meeting. A presentation was presented to the Board at the 8/10/20 Board Meeting. Various modeling alternatives are still ongoing and the full model results will be available by the third quarter of 2021. The project is funded by the LCA Suburban Division. **(No Change)**

4. Suburban Division – Western Lehigh Manhole Rehabilitation Project – Phase 2 Construction Phase

This project involves the rehabilitation of key manholes in the Western Lehigh Interceptor service area. The project includes flood-proofing, interior pipe connection grouting, exterior concrete work and sealing of manholes, particularly those manholes in close proximity to the floodway, which experience floodwater inundation. The purpose of the project is to eliminate floodwater inflow into the system. The project scope for Phase 1 included 50 manholes that were rehabilitated in 2020 as part of a phased manhole rehabilitation program. The Phase 1 project construction was completed in early 2021. Phase 2 of the WLI Manhole Rehabilitation Project, which includes a similar scope with manholes moving downstream in the WLI drainage basin, was advertised for bid in June 2021, with the construction phase authorized at the July 26, 2021 Board meeting. It is anticipated that construction will begin in early fall 2021 and conclude by the end of the year. **(No Change)**

5. Suburban Division - Trexlertown Area Capacity Solution Alternative

As part of the Interim Act 537 Plan that was approved by DEP in June 2021, a conveyance capacity "bottleneck" was identified in the Trexlertown area of the Western Lehigh Interceptor, and this area was assigned a high priority due to occurrence of sanitary sewer overflows and basement backups in the vicinity. A parallel interceptor was originally conceived to run approximately from Cetronia Rd to Spring Creek Rd. An alternative concept also studied to focus on providing storage capacity in the system for this area, due to concerns about downstream hydraulic impacts. These two alternatives were studied by HDR as authorized by the Board in 2019, with results indicating downstream impacts and long construction timelines due to location in environmentally sensitive areas. A third alternative has been developed which includes bypass pumping from a location at the Industrial Pretreatment Plant to a location in the Upper Macungie Township interceptor which has capacity for the additional flows, thereby relieving this bottleneck. This third alternative has been modeled successfully by Arcadis showing minimal downstream impact and a significant reduction of overflows in the Trexlertown area. An overview of these alternatives was provided to the Board in June 2021. Upon

successful Special Act 537 Planning completion, a Part 2 permit will be submitted to DEP. Board authorization requests for planning, permitting, and design services are forthcoming.

6. **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. On April 10, 2021, LCA conducted 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. A draft report is in-hand and LCA staff is currently working with our consultant to finalize the report. **(No Change)**

7. **Suburban Division – Park Pump Station Phase 2 Upgrade - Design Phase**

The Park Pump Station Phase 1 Upgrade was completed in early 2020, and consisted of new pumps, new pump control center with variable frequency drives, new automatic transfer switch, new wet well level control system, upgraded HVAC system, roof replacement, new pump removal access hatch, new pump hoist system, and associated mechanical and instrumentation equipment. The existing 40-year old generator does not have the capacity to handle the full loads of the upgraded station at 100% design flow and is at the end of its useful life. The Phase 2 Upgrade project consists of replacement of the original station backup generator system. The designer of record for the Phase 1 Upgrade was Whitman, Requardt & Associates, LLP (WRA). As WRA is already very familiar with the power systems and controls at the station, Capital Works requested a design phase proposal from the firm for the Phase 2 project. Authorization for design phase was granted at the March 22, 2021 Board meeting. Design is anticipated to be completed by the end of 2021. **(No Change)**

8. **Suburban Division – Sand Spring WWTP Upgrade Project Construction**

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 final design was delayed due to DEP Part 2 Water Quality Management and NPDES permitting issues. DEP approval of the Water Quality Management Permit was received in late December 2018, the design was finalized in late Spring 2019, and the project was advertised for bid in July 2019. Bids were opened on 8/13/19 and construction phase authorization was approved at the 8/26/19 Board meeting. A pre-construction meeting was held on 11/1/19 following execution of contract documents. Conditional Use approval and land development

waiver were granted by North Whitehall Township in Spring 2020. Construction mobilization for site work occurred in late winter 2020 and construction is proceeding. Substantial completion and start-up of the new facility occurred in May 2021 and the project will be closed out by the end of Summer. **(No Change)**

9. **Suburban Division - Lynn Township Corrective Action Plan**

Excessive inflow and infiltration (I&I) and high wet-weather flows into the Lynn Township sewer system has been ongoing and increasingly challenging to address. As noted in LCA's monthly operations reports, treatment plant bypasses and sanitary sewer overflows have occurred in this system and must be addressed. A meeting was held at Lynn Township with DEP and township representatives in June 2019 to discuss the Lynn Township Corrective Action Plan and Township sewer planning/growth issues, and DEP directed LCA to submit a CAP Amendment by the end of summer 2019. The CAP Amendment contained an updated sewer system condition assessment and a corrective plan to further mitigate I/I flows. Updated CCTV work of the entire system was substantially completed in August 2019, and the inspection data was summarized in the CAP Amendment and is being used to scope a capital repair project. The Lynn Township Board of Supervisors adopted a sewer system rules and regulations ordinance on 9/12/19, which gives LCA the authority to inspect private laterals and facilities for illegal connections and perform follow-up enforcement. A meeting with DEP and Lynn Township representatives was held on 1/15/20 to discuss the CAP Amendment and plan moving forward. DEP sent a letter to LCA dated 6/8/20 granting 55 EDUs of sewer allocation relief for new connections to the system. **(No Change)**

10. **Suburban Division - Heidelberg Heights Consent Order & Agreement**

On 2/11/19, DEP submitted a notice of violation to LCA regarding bypasses and permit exceedances at the Heidelberg Heights wastewater treatment plant. The system has been challenged by high groundwater levels and significant infiltration and inflow (I&I) of clear water into the sewer system during rain events. LCA staff developed a Corrective Action Plan (CAP) which was submitted DEP in April 2019. The Heidelberg Township Board of Supervisors adopted an updated sewer system rules and regulations ordinance in October 2019, which gives LCA the authority to inspect private laterals and facilities for unauthorized connections and perform follow-up enforcement. A Consent Order & Agreement (CO&A) was approved by DEP and LCA in June 2020, which incorporates the projects and schedule outlined in LCA's CAP. The first annual report was submitted to DEP per the CO&A requirements in late March 2021. A public outreach program will be initiated in 2021 regarding upcoming inspections of private side sewer facilities, to commence in 2022. **(No Change)**

11. **Kline's Island Sewer System – Regional Sewer Capacity & Wet-Weather Planning – Sewage Billing Meter QAQC Data Analytics and 2021 Flow Metering Preparation**

As part of the Interim Act 537 Plan, the municipalities served by the Kline's Island Sewer System have committed to completing a flow metering and modeling project beginning in 2021. The flow metering data will be used to prepare modeling and identify the capital improvements needed to meet the future sewage capacity needs of the region through 2050. The flow metering will include a mix of temporary meters and the existing sewage billing meters. Data delivery and storage procedures, quality assurance, and flow analytics were implemented in 2020 for these sewage billing meters. Without this meter development program, the data cannot be used from these billing meters. A consulting engineer's professional service proposal was granted at the April 27, 2020 Board meeting. Costs associated with the development of the QA/QC data analytics and the 2021 flow metering preparation will be paid by the City of Allentown and reimbursed through existing intermunicipal agreements and by City customers through the use of the Administrative Order Fee. As of late August 2021, the flow metering program continues to utilize 22 existing sewer billing meters.

12. **Kline's Island Sewer System – Regional Sewer Capacity & Wet-Weather Planning: 2021 Model Expansion and Calibration**

The prior KISS sewer model from 2014 included only the City of Allentown and LCA/Western Lehigh municipalities. The primary goal of this work is to expand the sanitary sewer model into the surrounding Signatories (Coplay, Whitehall, North Whitehall, Hanover, South Whitehall, Salisbury, and Emmaus). Calibration of this expanded model to current flow characteristics will aid in the identification and evaluation of regional alternatives for solutions to both treatment and conveyance through the year 2050 Act 537 planning horizon (the LCA/Western Leigh portion of this model calibration work was completed in 2019 and 2020). The end result of this proposed work will provide one comprehensive, calibrated sewer model for the entire KISS system using 2021 temporary meter flow data and rainfall data. On February 22, 2021, Board approval was granted for this next phase of Act 537 planning efforts. The model is anticipated to be complete by June 2022. **(No Change)**

13. **Allentown Division – Sanitary Sewer Collection System: Rain Derived Inflow and Infiltration (RDII) Analysis**

The main goal of this work is to conduct an RDII analysis of storm events during the flow monitoring period to determine the nature and extent of infiltration and inflow (I&I) leakage, and to use hydrograph interpretation to help the City focus their rehabilitation work (both secondary Sanitary Sewer Evaluation Survey (SSES) investigations and rehabilitation efforts) toward the sources contributing the leakage. It will also be determined where the flow meters should be installed for the next monitoring period and where SSES future work should be completed. Data from approximately 43 temporary flow meters and five rain gauges from the 2021 flow metering program will be used for this analysis. The analysis itself will begin in late 2021 and will be concluded by March of 2022. On February 22, 2021, Board approval was granted for this project. **(No Change)**

14. **Kline’s Island Sewer System – Act 537 Planning: 2021 Flow Data QA/QC**

As part of the Interim Act 537 Plan, the municipalities served by the Kline’s Island Sewer System have committed to completing a sewage flow metering and modeling project beginning in 2021. The flow metering data will be used to prepare sewer modeling and identify the capital improvements needed to meet the future sewage capacity needs of the region through 2050. The flow metering program will include a mix of temporary meters (~63), existing sewage billing meters (~24), and various permanent, non-billing Signatory meters (~11). Flow metering services will be provided by Flow Assessment Services, as previously authorized in 2020. To ensure the data collected from the nine-month monitoring period are accurate and to ensure the validity of the resulting hydraulic model, a rigorous quality assurance and quality control program must be implemented. Approval of a consulting engineer’s proposal for this work was granted at the January 25, 2021 Board meeting. Costs associated with these services will be paid by the City of Allentown and reimbursed through existing intermunicipal agreements and by City customers through the use of the Administrative Order Fee. The 2021 flow characterization study will be completed by October or November of 2021, with the second round of QA/QC having been recently concluded.

15. **Allentown Division – Sanitary Sewer Collection System: I&I Source Reduction Program Plan (Year 2)**

This project includes the design of the City of Allentown’s I&I Source Reduction Program Plan. In 2014, Video Pipe Services complete various CCTV inspections throughout twenty Primary and Secondary Basins. All pipe segments that called for complete pipe replacement have already been repaired. The remaining source reduction activities within the twenty Basins have been organized into a 5-Year Plan, with each year focusing on a different geographic region of the City’s sewer collection system. Design has been approved for all five years, with the first project completed in 2020 and the last project finishing in 2024. Board approval for the construction phase was granted at the March 22, 2021 Meeting. Construction began in May 2021 and will be completed by November 2021. This project is considered an AO expense under terms of the Lease and is City funded. **(No Change)**

16. 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 directed to “pause” the design phase of the project. The City has now directed LCA to keep this project on indefinite hold. **(No Change)**

17. Allentown Division – Kline’s Island WWTP: Max Monthly Flow Capacity Evaluation

DEP has noted that the KIWWTP has been performing at a high level and meeting its permitted effluent quality limits during a period of prolonged wet weather since early 2018. This study will provide the basis for confirming the plant’s maximum monthly average that can be sustained during prolonged periods of wet weather – while remaining in full compliance with effluent quality requirements of the plant’s permit. Approval of the study was granted at the 8/26/19 Board Meeting. The study was completed in mid-October 2019 and a Part II Permit was sent to DEP on 10/18/19. The permit was then resubmitted in late January 2021. Upon receipt of the Interim 537 Plan approval on 6/25/21, the permit submission was slightly modified to correspond with a 44.6 MGD hydraulic re-rate. This project is considered an AO expense under terms of the Lease and is City funded.

18. Allentown Division – Kline’s Island WWTP: Sodium Hypochlorite System Installation Project – Construction Phase

This project involves the replacement of the existing gaseous chlorination system at the Kline’s Island Wastewater Treatment Plant (KIWWTP). The use of gaseous chlorine for effluent disinfection, while reliable, is outdated and creates significant public health and employee safety risks. In addition, the existing equipment has reached the end of its useful life. The 2018 KIWWTP Master Plan recommended abandoning gaseous chlorine and switching to (liquid) sodium hypochlorite. The design commenced in March of 2019 and was completed in early 2020. The project was advertised for bid in February 2020, construction phase was authorized at the 6/8/2020 meeting and the contractor mobilized in late summer 2020. The project is anticipated to be completed in late Summer 2021. The project is funded by the LCA Allentown Division. **(No Change)**

19. Allentown Division – Kline’s Island WWTP: 2021 Indenture Upgrades - Construction Phase

As a condition of the financing of LCA’s up-front concession payment to the City, LCA entered into a Trust Indenture with the Manufacturers and Traders Trust Company that requires the preparation of an annual Consulting Engineer’s Report (Report). The Report, which is prepared each year by Arcadis, documents the condition of the water and wastewater facilities (KIWWTP and WFP) based on physical inspections by the engineer, identifies repairs and upgrades required, and reflects progress made in addressing deficiencies. This project consists of addressing structural deficiencies at KIWWTP, with work located at the Main Pump Station, Auxiliary Pump Station, Effluent Pump Station, and Plastic Media Trickling Filters. Work includes masonry repointing and restoration, door and window lintel replacement, concrete crack repair and resurfacing, and pipe painting. D’Huy Engineering completed design in February 2021, the project was advertised for bid in mid-March 2021, and bids were opened on April 19, 2021. Award of bids and construction phase authorization was approved at the May 10, 2021 LCA Board meeting. Construction is anticipated to be completed in Fall 2021. **(No Change)**

20. Allentown Division – Kline’s Island WWTP: Solids Process Boiler and HVAC System Upgrade Project - Design Phase

The solids process boiler system is more than 25 years old and provides critical heat to the anaerobic digesters and solids dewatering and processing buildings. The equipment has

reached the end of its service life, and replacement of the equipment is identified as a near-term (0 – 5 years) project priority in the KIWWTP Master Plan. This project includes replacement of the boilers and associated solids processing HVAC equipment. A preliminary engineering Basis of Design Report was prepared by GHD Engineering and submitted to the City Office of Compliance in January 2021. The City granted approval of the report in a letter dated 3/22/21 and the project is classified as a Major Capital Improvement. Approval of design phase engineering was granted at the May 24, 2021 LCA Board meeting and design is proceeding. **(No Change)**

21. **Allentown Division – Lehigh Street (Rte. 145) Water and Sewer Main Relocation Project**

As part of the Pennsylvania Rapid Bridge Replacement Program, the proposed replacement of the Lehigh Street Bridge near the intersection with MLK Boulevard has required the relocation of existing City water and sewer lines that are located within the PennDOT right of way. Because the bridge is owned by Lehigh County and not the Commonwealth, the normal PennDOT relocation reimbursement schedules do not apply. Therefore, the County and LCA have executed an agreement on cost reimbursement on similar terms. LCA's engineer is working on behalf of LCA on a final sewer relocation design that minimizes the extent of the relocation. There will be less water infrastructure relocation work required since the existing water main is attached under the bridge and will be reattached after the new bridge is constructed. Construction will commence in late 2021. **(No Change)**