

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

November 14, 2014

Rebecca Crane
Enforcement Officer
NPDES Enforcement Branch (3WP42)
United States Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Time Extension Request and Plan of Action related to USEPA Administrative Order
CWA-03-2009-0313DN

Dear Ms. Crane:

The City of Allentown (City), the Western Lehigh Sewerage Partnership (WLSP), Salisbury Township, Hanover Township, and the Borough of Emmaus are jointly requesting an extension of the deadline for compliance with the USEPA Findings of Violation, Order for Compliance, and Request for Information, Docket No. CWA-03-2009-0313DN (Administrative Order). The WLSP consists of:

- Borough of Alburtis
- Borough of Macungie
- Lehigh County Authority (LCA)
- Lower Macungie Township
- Lowhill Township
- Upper Macungie Township
- Upper Milford Township
- Weisenberg Township

All signatories were invited to be part of the development of this request for extension and the ones that have elected to participate jointly have signed this letter. The non-participating Signatories are South Whitehall Township and Coplay Whitehall Sewer Authority.

Background

The City, WLSP and other signatories have been working diligently towards achieving compliance with the Administrative Order and provided detailed "Five-Year Summary of Activities" in an October 20, 2014, letter to the USEPA. As described in that letter, we are collectively working hard to address the requirements of the Administrative Order. The types of work completed thus far include, but are not limited to, the following:

- Flow metering
- Preparation of hydraulic models of the City of Allentown and Western Lehigh Interceptor systems; then combining these models into the Kline's Island Sewer System (KISS) Model
- CCTV inspection of sewers
- Manhole inspections
- Smoke testing
- Basement inspections
- Disconnection of sump pumps and roof drains
- Repair of cleanout caps
- Cured-in-place pipe lining of sewers
- Grouting of sewer joints
- Replacement of sewers
- Manhole rehabilitation
- Installation of manhole dishes to prevent inflow
- Kline's Island WWTP influent screen replacement
- Construction of a 3-million gallon flow equalization basin (FEB) at the LCA pre-treatment plant; establish wet-weather operating protocol to optimize use of the FEB to achieve maximum reduction in overflow volume in the WLSP collection system

Extension Request

Compliance with the Administrative Order requires cooperation and collaboration between all the signatories. Great progress has been made towards establishing a cooperative management of flows, including numerous meetings of the parties to coordinate activities. Such coordination, however, takes time. Because the final scope of work necessary to comply with the Administrative Order, including associated allocation of costs among all the signatories, is not yet defined, the City and WLSP have proposed to implement the remaining activities under the Administrative Order in a phased approach. Through meetings and discussions, the City and WLSP have developed a joint plan of action (attached to this letter) that details the activities to be included in the two phases generally described below:

Phase 1: Engineering, modeling and financial planning activities required to establish a capital improvement plan that includes specific scopes of work and construction schedules

Phase 2: Implementation of the capital improvement plan.

The City and WLSP are requesting a deadline of December 31, 2017, for the completion of Phase 1 (our goal is to complete Phase 1 by October 31, 2017 as shown in the attached Plan of Action). When the capital improvement plan is finalized and submitted to USEPA at the completion of Phase 1, it will include a proposed construction schedule and a requested schedule for completion of Phase 2 (construction of improvements).

The Borough of Emmaus has prepared a separate plan of action and request for a schedule extension which is attached to this letter.

Salisbury Township has prepared a separate plan of action (attached to this letter) focused on system maintenance over the next 10 years to achieve further inflow and infiltration reduction.

Hanover Township does not have a plan of action as the portion of their system that sends sewage to the City's wastewater treatment plant is very small and reported by Hanover Township to not require any further repairs or rehabilitation.

We believe that we have demonstrated the collective efforts and commitment of the City, the WLSP, Salisbury Township, Hanover Township, and the Borough of Emmaus to meet the requirements of the Administrative Order and respectfully request that you consider our request for an extension of time for us to meet our obligations. We believe that any extension granted for compliance with the Administrative Order should apply to all City Signatories. We are available at any time to discuss this request. Please contact Pat Mandes at (610) 398-2503 with any questions or to schedule a meeting to discuss.

Sincerely,

Aurel Arndt



Chief Executive Officer
Lehigh County Authority
(representing the WLSP)

Edward Pawlowski



Mayor
City of Allentown

Signature: 

Name: SANDRA A. PUDLINER

Title: TOWNSHIP MANAGER

Hanover Township

Signature: 

Name: RANDY SORIANO

Title: TOWNSHIP MANAGER

Salisbury Township

Signature: 

Name: Shane M. Pepe

Title: Borough Manager

Borough of Emmaus

Lehigh County Regional Wastewater System

Administrative Order Public Meeting

November 13, 2014 – 6:30 p.m.

Welcome & Opening Remarks

- Craig Messinger, Director of Public Works, City of Allentown

Partner Introductions & Meeting Purpose

- Aurel Arndt, CEO, Lehigh County Authority

Technical Presentation

- Tony Dill, Program Manager, Arcadis

Questions & Answers*

- Moderated by Aurel Arndt

Exhibits & Feedback:

I&I CSI – Photos of sources of I&I, and video clips of investigative tools used to pinpoint where to make repairs. Moderated by Pat Mandes, LCA Compliance Director.

Where the Flow Is – Review details of the region-wide flow metering investigations completed to find sources of peak flows. Moderated by Tony Dill, Project Manager, Arcadis.

Getting the Water Out – Photos and samples of rehabilitation materials and methods used to repair manholes and sewer lines. Moderated by Bob Kerchusky, LCA Wastewater Services Director.

Calling All Homeowners! – A review of homeowner responsibilities and ways to reduce rain water inflow into our sewer systems, and a rain barrel example. Moderated by Angela DiBuo, Brian Chamberlain & Jennie McKenna, Allentown Compliance Office.

Feedback – Sign in to make sure we have your contact information so we can send you updates and a full Q&A listing after the meeting, and submit your questions and feedback before you leave. Moderated by Liesel Adam, LCA Chief Administrative Officer.

* Question & Answer Process: Please use the postcard provided to jot down questions that come to mind during the presentation portion of the meeting. If you have written down a question you'd like to ask one of our speakers, raise your postcard and a moderator will pick it up. After the presentation, we will allow some time for these questions to be addressed by the speakers during the Q&A portion. However, to ensure everyone has time to also see the exhibits, we will limit this to just a few great questions. You will also have time during the exhibit portion of the meeting to ask questions directly. All questions submitted on postcards or during the exhibit portion of the meeting will be compiled and emailed out to anyone who signs up to receive them, and posted online at www.lehighcountyauthority.org.

Definitions & Abbreviations

SSO – Sanitary Sewer Overflow

A condition in which untreated sewage is discharged into the environment prior to reaching sewage treatment facilities. In the Lehigh County Regional Wastewater System, most overflows are caused by excessive inflow of rain water during storm events.

Bypass & Outfall

A bypass condition is one where untreated or partially treated wastewater is discharged into the environment in a planned manner to protect the collection system and treatment plant from damage when experiencing peak flows caused by a major storm event. At the regional wastewater plant located in Allentown, such bypasses were anticipated in the plant's design, and an "outfall" facility constructed decades ago as a permitted method to conduct such bypasses.

AO – Administrative Order

An enforceable order by the USEPA requiring all municipalities and sewer authorities connected to the regional sewer system to take corrective action to eliminate sanitary sewer overflows (SSOs).

I&I – Infiltration & Inflow

Terms used to describe the ways that groundwater and stormwater enter into the sewer systems.

- Infiltration is typically groundwater flow that seeps ("infiltrates) into sewers through sewer pipes and/or manholes.
- Inflow is typically stormwater that enters the sewer system through unauthorized connections such as roof drains and sump pumps, as well as through manholes and sewer lines.

RDII – Rainfall-Derived Infiltration & inflow

The measurable increase in water flow in a sanitary sewer system that occurs during and after a storm event. By measuring the RDII through flow-metering programs, we can find the "leakiest" portions of the sewer system that need to be addressed.

WLSP – Western Lehigh Sewerage Partnership

A partnership of nine municipalities and sewer authorities that have been working collaboratively on AO work since 2009. The WLSP is made up of the boroughs of Macungie and Alburtis, Upper Milford, Upper Macungie, Lower Macungie, Lowhill and Weisenberg townships, the Upper Macungie Township Authority, and Lehigh County Authority.

SCARP – Sewer Capacity Assurance & Rehabilitation Program

The corrective action plan developed by the Western Lehigh Sewerage Partnership (WLSP) as a method of responding to the Administrative Order and tracking progress on eliminating Infiltration and Inflow.

SSES – Sanitary Sewer Evaluation Study

Common terminology used in the wastewater field to describe methods of evaluating a sanitary sewer system for leaks. Elements of SSES work might include CCTV work, smoke testing, dye testing and visual inspections of facilities.

Smoke Testing & Dye Testing

Ways of finding leaks in underground sewer lines. For smoke testing, non-toxic smoke is pumped into the sewer lines and the area is visually inspected to see where the smoke rises. Where smoke rises indicates a leak or an unauthorized connection. Dye testing is similar, with a non-toxic dye added to the sewer flow, and local streams and storm drains inspected to see if sewage is leaking out of the system somewhere it shouldn't be.

CCTV – Closed Circuit Television
FEB – Flow Equalization Basin
MG – Million Gallons
LF – Linear Feet
WLI – Western Lehigh Interceptor

USEPA - United States Environmental Protection Agency
PA-DEP – Pennsylvania Department of Environmental Protection
KIWWTP/KITP – Kline's Island Wastewater Treatment Plant
NPDES – National Pollutant Discharge Elimination System
KISS – Kline's Island Sewer System

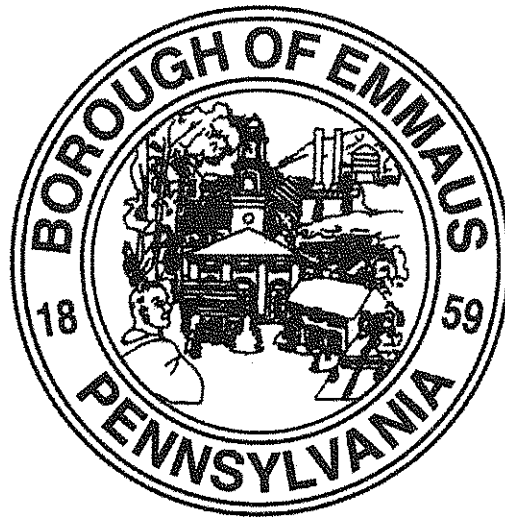
Western Lehigh Sewerage Partnership/City of Allentown				
	Action	Anticipated/ Actual Start	Anticipated/ Actual Finish	
Phase 1	1	537 Plan new flows for 2020, 2030, and 2040 planning horizons for all signatories.	November 2012	March 2014
	2	Preliminary screening of alternatives for WLSP and considering flow issues only to Kecks Bridge to shorten the overall schedule. [COA Phase 1 Corrective Action Report]	Spring 2013	May 2014
	3	Combining of WLSP and COA models into combined KISS model	May 2014	June 2014
	4	Running initial 537 Plan alternatives	June 2014	July 2014
	5	Collect rainfall and flow data between Kecks Bridge and KIWWTP to better calibrate KISS model in this zone.	June 2014	September 2014
	6	Trim the KISS model to run more effectively	October 2014	November 2014
	7	Recalibrate KISS model between Kecks Bridge and KIWWTP	October 2014	December 2014
	8	Conduct peaking factor evaluation of all metered connections	January 2015	February 2015
	9	3 engineering teams select initial alternatives to model	October 2014	December 2014
	10	Final screening of wet and dry weather alternatives using KISS model to seek coordinated, holistic, economical solutions through to KIWWTP blending and not blending including options for 537 Plan, AO, and SCARP. [COA Phase 2 Corrective Action Report draft]	January 2015	November 2015
	10a	Run first round of alternatives. Select second round of alternatives to run.	January 2015	May 2015
	10b	Run second round of alternatives	June 2015	November 2015
	10c	Discussions with each municipality on likely issues, costs, and timetables.	March 2015	November 2015
	11	Recommend 3 potential courses of action to WLSP partners and COA Signatories for initial consideration and feedback, including total 2040 CIP cost	December 2015	January 2016
	12	Develop 2017-2040 phased costing for 3 recommended alternatives.	February 2016	March 2016
	12a	Decision on Blending*	March 2016	
	13	Select draft combined approach	April 2016	June 2016
	13a	Discussions with each municipality on likely issues, costs, affordability, and timetables.	March 2016	June 2016
	14	Develop SCARP CIP budget and 2017-2040 cash flow demand for each signatory on draft combined approach	July 2016	August 2016
15	Conduct individual WLSP partner financial reality checks, prepare themselves financially, and negotiate and adopt a mutually agreeable Memorandum of Understanding (MOU) between them governing SCARP implementation.	September 2016	September 2017	
16	COA to conduct discussions with COA signatories regarding scope and costs for selected alternative as it impacts their service areas directly or impacts them as cost-sharing for improvements to COA infrastructure.	September 2016	September 2017	
17	Negotiate MOU with COA for COA-LCA joint projects for each aspect of SCARP/AO CIP implementation	September 2016	September 2017	
18	Negotiate MOU with COA for COA-signatory joint projects for each aspect of SCARP/AO CIP implementation	September 2016	September 2017	
19	Submit SCARP/AO CIP plan (schedule, budget, cash flow) to USEPA - End of Phase 1	October 31, 2017	October 31, 2017	
Phase 2	20	Phase 2 - Procurement, Design, and Construction of AO/SCARP CIP projects [Multiple Phases possible - to be determined as CIP is prepared]	January 2018	**
	A	High priority I&I source removal activities that are expected to be included in any final alternative will continue to be conducted on an independent path to accelerate achievement of current capacity issue elimination.	Ongoing	Ongoing

Notes:

* - If resolution of blending is delayed, the schedule of remaining activities is extended until resolution.

** - Schedule for implementation of the CIP to be submitted with CIP.

Borough of Emmaus



**Administrative Order
CWA-03-2009-0313DN**

Time Extension Request & Plan of Action

Borough of Emmaus
EPA Administrative Order CWA-03-2009-0313DN
Extension Request and Plan of Action

Please consider this a formal request by the Borough of Emmaus to extend the deadline for EPA Administrative Order CWA-03-2009-0313DN. The Administrative Order provides a current deadline of December 31, 2014 for the Borough of Emmaus to eliminate the stormwater inflow and infiltration into the sewer system. The Borough of Emmaus is requesting to extend this deadline to December 31, 2024, a ten-year extension. With this extension request, the Borough has provided a background and action plan to be able to meet the requirements of this Administrative Order.

Historical Background:

The Borough of Emmaus has made great strides in its attempt to comply with Administrative Order CWA-03-2009-0313DN. The Borough, in its effort to reduce stormwater infiltration into the sewer system, began to voluntarily comply and reduce stormwater infiltration beginning in 2006.

To date, the Borough of Emmaus has inspected every residence in the Borough of Emmaus, a total of 4,223 parcels. The inspections resulted in 168 Basement disconnections, 55 cleanout repairs and cap replacements, 87 roof drain disconnects, and 39 other lateral repairs. The program required a great effort of manpower and administrative time and cost to complete. This project cost approximately \$152,000 in manpower to complete. This included over 6,000 man-hours of labor. With a limited staff, this was a considerable effort. It is our understanding that we are the only municipality in the Lehigh County Authority sewer basin to undertake and complete such a comprehensive inspection and remediation effort.

The Borough also spent a considerable amount of funds completing CCTV inspections and pipe rehabilitation from 2003 to 2013. This has cost approximately \$302,000. Between 2007 and 2013, the Borough has reduced approximately 16.3% of the sewerage entering from Emmaus through the sewer system. This is not because of lack of use of the sewerage system. Moreover, the primary reason for this reduction is due to the stormwater reduction efforts.

In 2007, with a yearly rainfall total of 48.72 inches, a total of 456,171,700 gallons of sewerage passed through the system. In 2013, with a yearly rainfall total of 48.29 inches, a total of 381,687,900 gallons passed through the system, a reduction of 74,483,800 gallons with a total rainfall difference of under 0.5 inches for the entire year.

Moreover, the Borough of Emmaus realizes that there is more work to be done. The Borough has four (4) preinstalled meters on our sewer lines. Meter 1 averages 50,000 gallons per day. In a 1" rainfall, the reading increases to 75,600 gallons, a 51.2% increase, albeit, overall, a small increase in terms of volume. Meter 2 averages 360,000 gallons per day. In a 1" rainfall, the reading increases to 429,800 gallons, a 19.39% increase. Meter 3 averages 50,000 gallons per day. In a 1" rainfall, the reading increases to 63,800 gallons, a 27.6% increase. Meter 4 averages 510,000 gallons per day. In a 1" rainfall, the reading increases to 1,187,800 gallons, a 132% increase. We are not convinced that the

Borough of Emmaus

EPA Administrative Order CWA-03-2009-0313DN

Extension Request and Plan of Action

November 4, 2014

Page 2

additional flow is solely from the Borough of Emmaus, as the Upper Milford Township sewerage flow crosses our interceptor on this meter. Flow meters at the beginning of the interceptor will help determine this. We need to continue to concentrate on eliminating this extra flow.

One area where we are aware of infiltration is through the Borough's manhole inserts. Records for purchase and installation of manhole dish inserts are incomplete. The Borough of Emmaus Public Works Department is aware of at least 60 manhole dish inserts having been purchased for the system, but the exact number and locations of inserts currently in place cannot be confirmed at this time. Tracking of the insert locations will be updated with periodic manhole inspection observations. Sewer system manhole frames are re-set to match finished street grade and cross-slope whenever street pavement overlay/reconstruction work is performed. The exact number of re-set frames is not known. In 2014, the Borough began to take a more aggressive approach regarding manhole covers and inserts. The Borough purchased a software program called IWORQ to assist with tracking and identifying all water and sewer lines, as well as manholes in the Borough. The interactive program allows the Borough to place work orders and maintenance reports per each asset. It also allows the Borough to track all work via a reporting system. The program cost approximately \$8,000 in the first year and approximately \$5,500 for each year thereafter. The Borough hired two interns in 2014 to conduct GIS analysis and work with the Borough Engineer to identify, locate, and map all of these assets. The cost to conduct this analysis was \$7,500. The program will allow the Borough to adequately track and inventory all manhole improvements. This will be discussed in further detail in the Action Plan portion of this discussion.

The Borough has installed approximately 874 LF of cured-in-place pipe lining to address severe sewer line leakage and structural issues. We have also replaced 20 LF of sewer line and installed 14 pipe joint sleeve repairs as part of our annual sewer line I & I inspection process. The number of pipe joints sealed with grout is not known, but is substantial. The Borough's older sewer mains are generally 5-foot sections of VCP. Approximately 24,900 feet of sewer mains were air-tested at joints and, where needed, pressure-grouted to seal leaks. Approximately 4,650 gallons of grout were utilized for these joint repairs to date.

The Borough has contracted or is in the process of contracting for TV inspections and pipe joint grouting in all four sewer basins. In Sewer Basin 1, we inspected and grouted approximately 11,357 feet of 8" pipe, representing the entire meter basin (mostly VCP). This also resulted in one open cut pipe repair. Basin 2 inspections will begin after the completion of higher priority sub-basins within Basin 4. Sewer Basin 3 improvements included TV inspections and pipe joint grouting of the entire basin, consisting of approximately 14,495 feet of 8" pipe (mostly VCP). Basin 4 improvements included contracting for TV inspection of 50,092 feet of 8" pipe in 5 of 9 sub-basins, including selective pipe joint grout repair. It also resulted in CIPP lining of multiple pipe sections, numerous spot repairs, and one open cut pipe repair. Additional sub-basins will be inspected in coming years, including in 2014.

Borough of Emmaus

EPA Administrative Order CWA-03-2009-0313DN

Extension Request and Plan of Action

November 4, 2014

Page 3

The Borough of Emmaus has participated and continues to participate in joint efforts with the Lehigh County Authority, City of Allentown, and other associated Sewer signatories. The Borough has engaged a great effort and has delivered significant reductions in stormwater infiltration over the past five years; however, there is much more work to be done.

Reasons for Extension Request:

The Borough of Emmaus is a full-service governmental operation. We do not have a Sewer Authority or other separate entity operating our Sewer Department. The sewer function of our operation is included in with the Public Works, Water, Refuse / Recycling, Parks and Recreation Department. In addition to these services, the Borough government provides an ambulatory service, a fire service, codes enforcement, and 24/7 Police Department services. Because of the complexity of the government, each department operates on a limited budget. The sewer operation has its own fund, with revenues and expenses being operated solely out of this fund. However, manpower is limited, as it is shared with other services. Therefore, the Borough has challenges in both the areas of manpower and financial ability to fund some of the larger capital projects in the sewer.

Our strategy has been to spread out the projects to try to minimize the financial impact on our end users, although the Borough has dramatically increased sewer rates over the past several years. It is estimated to cost an additional \$685,000 for the completion of CCTV inspections and repairs in the remaining 32.7 miles of Borough sewer mains. There is no estimate at this time regarding the cost to replace manhole inserts, however, the Borough budgeted approximately \$30,000 in 2014 and plans to budget at least this amount in 2015 and beyond to address this effort. We are in the infant stages of this program. Budget limitations have prevented the Borough from being able to complete 100% separation over the past five years. We believe that a more believable timeline to meet these requirements will be an additional ten (10) years.

Additionally, it is a common fact that the Borough of Emmaus possesses the oldest lines in the out-of-City sewer systems. This has presented unique challenges to the Borough, as we are faced with many issues in our system. The Borough of Emmaus sewer system includes approximately 47.1 miles of sewers in four metered drainage basins. The Borough has been conducting CCTV inspections of its sanitary system since before the year 2000, but records prior to 2003 are incomplete. Since 2003, Basins 1 and 3 have been fully inspected and the inspection of Basin 4 is approximately 37% complete. These inspections have included 14.4 miles or about 30% of the Borough's sewer lines. Inspections of select areas in the balance of Basin 4 and Basin 2 are anticipated over the next 5 years, and complete inspections are anticipated over the next 10 years.

Borough of Emmaus

EPA Administrative Order CWA-03-2009-0313DN

Extension Request and Plan of Action

November 4, 2014

Page 4

The Borough took a proactive approach many years prior to the EPA Administrative Order. It was the Borough's philosophy that the separation of building stormwater from the sewer stormwater would have a dramatic effect on the reduction of stormwater entering sewer lines. It was apparent that the Borough reduced stormwater entering the sewer lines by more than 30% between 2007 and 2013; however, it is also apparent that the home and building inspections, despite the intensive investment of man-hours and dollars, did not separate enough stormwater from the system. The more difficult process for the Borough, however, is locating exactly where the largest inflow and infiltration is coming from. This is going to require additional camera work, installing flow meters, and examining laterals into the system as well. This will take a great deal of time, labor, and money to complete. Most importantly, because of the complexity of the Borough's sewer lines, the issue of time is the largest concern, as the project will include installation of flow meters, conducting timed readings, and relocating the meters in an attempt to pinpoint inflow and infiltration. With over 47 miles of sewer lines, the process will take quite some time.

For the reasons listed above, it is imperative that the Borough of Emmaus requests an extension for the EPA Administrative Order. We continue to work diligently and valiantly to meet the requirements of the Order; however, as a municipality that focuses on multiple functions, we have had many challenges in meeting the five-year mandate. We do not believe that it would be prudent or productive to be punished in any way because we have not met all requirements of the mandate. As we have clearly indicated, the Borough of Emmaus has exerted a great amount of effort and has taken the Administrative Order with the utmost importance and seriousness. However, the five year mandate was not feasible by any stretch of the imagination for a municipality with a shrinking tax base and limited growth potential. We also believe that we have more than proven that we have diligently worked to address the issues within the Administrative Order, beginning many years before the Order was imposed. Therefore, we believe that it is fair and in the best interest to request and receive an extension to be able to adequately complete the directives of the Order.

Extension Request and Timeline:

The Borough of Emmaus believes that it would be most feasible to be able to complete all of the needed improvements within a ten (10) year extension period. Therefore, we are requesting an extension to December 31, 2024. It is our estimation that the TV inspection program will be completed within five (5) years. We also estimate that all of the needed improvements and other monitoring and repair work will be completed within ten (10) years. To be able to complete many of these projects, the Borough is going to need to invest in several capital equipment purchases and budget for multi-year capital projects. In a municipal budget, this is a process that takes time, effort, and a great deal of money.

Borough of Emmaus
EPA Administrative Order CWA-03-2009-0313DN
Extension Request and Plan of Action
November 4, 2014
Page 5

Plan of Action:

The Borough has created a short-term and long-term plan of action to help meet the requirements of the Administrative Order. This plan is a mix between continuing efforts and new efforts in eliminating inflow and infiltration.

Timeline:

The Borough of Emmaus estimates that the CCTV inspection program will continue in portions of Basins 4 and 2 and will be completed by December 31, 2019, as the Borough Engineer has established a 5-year plan to complete the work. In 2014, the work includes moving east from the 4th Street area south of the tracks, where we last inspected. Since we've covered all of Basin 4 south of the tracks, this would put us into a part of the master meter 2 sub-basin, keeping our focus on the toe slope of the mountain. The project will also include a small area of Greenleaf & Berger that drains direct to the Salisbury Township sewer system without running through a master meter station.

In 2016, the Borough will have completed the manhole inspection pilot study to determine if the larger scale project is needed to help reduce the inflow component of the sewer system. In 2014, the Borough budgeted \$24,000 to begin to make manhole repairs at known areas of concern. The Borough has 3,500 manholes in the streets. In 2015, the Borough plans to budget \$30,000 for manhole cover and insert repairs and improvements. If a larger project is needed, depending on the size and number of needed improvements, this project will take the entirety of the 10-year plan.

Measuring meter flow and tracking additional flow through the system will be a systematic and lengthy process. This project, accompanied with the needed repairs, will take the entirety of the 10-year period. This will also include addressing sewer laterals as well as sewer mains. In addressing sewer laterals, the Borough will instruct property owners to make necessary repairs if I & I issues are found in the property laterals. We note that, since the time when Borough started the camera inspection program, improvements in the inspection equipment technology have made it possible and affordable to perform better inspections of lateral connections to the sewer mains. Branch cameras can now reach many feet into the laterals to inspect and record the conditions encountered. This technology is being incorporated into the annual video inspection program to aid in better identifying the location of problems in customer sewer laterals.

Capital projects will include sewer line replacement where needed, as well as capital equipment purchases. These projects are dependent upon the findings from TV inspection work, camera work, independent examinations and discovery, and results from the flow meter pod readings.

Borough of Emmaus

EPA Administrative Order CWA-03-2009-0313DN

Extension Request and Plan of Action

November 4, 2014

Page 6

Capital Equipment and Project Investments:

The Borough has invested a great deal of money to reducing infiltration and inflow efforts. However, the Borough has committed to changing its strategy in reducing I & I into the sewer system. Although the 2015 budget is not finalized at this point, we have proposed the following equipment and projects for I & I separation efforts in 2015:

- Manhole Cover and Insert Improvements: \$30,000 per year – needed to reduce inflow into the sewer system.
- Manhole Saw – Mr. Manhole: \$45,000 – currently it takes 6 hours to cut out, re-level (or slope to match roadway surface), waterproof, and re-install manhole grade castings. With this saw, the effort is estimated to be reduced to approximately one hour, meaning we will be able to complete more manhole projects throughout the year in a safer, more efficient manner.
- Sewer Flow Meter Pods - \$5,000 – this will be the initial investment and purchase of flow meter pods. We will request additional flow meter pods in upcoming years.
- Sewer Van - \$26,000 – this is needed, as the current sewer truck is over 20 years old. The new truck will include all necessary equipment to address sewer issues.
- Equipment – Hydraulic Hammer - \$35,000 - this will allow staff to be able to dig through the road in a faster and more efficient manner.
- Equipment – Hydraulic Plate - \$10,000 – this will allow staff to compact the area around the lines quicker and more effectively.
- Inspection Camera - \$10,000 – this is to replace the current old camera used to inspect sewer laterals.
- I & I Expenses - \$75,000 per year – this is the expense to continue to conduct TV camera work and perform grout repairs in the sewer main lines. It is estimated that the Borough has 32.7 miles of remaining sewer mains needing inspection. The overall cost for sewer main television camera and repair work is estimated to be \$685,000 per the Borough engineer.
- IWORQ - \$5,500 per year – this is the software program used to create work orders, track, and maintain the borough's system.

Conclusion:

The Borough of Emmaus is requesting a time extension of ten (10) years to fulfill the compliance obligations of EPA Administrative Order CWA-03-2009-0313DN for the aforementioned reasons. It is our position that we have taken an aggressive approach to reducing the inflow and infiltration of water into the sewer basin, however, we are in need of more time to complete our efforts. The Borough is dedicated to meeting the requirements of the Administrative Order and continues to work diligently in working toward fulfilling our obligation.

Borough of Emmaus

EPA Administrative Order CWA-03-2009-0313DN

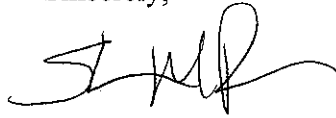
Extension Request and Plan of Action

November 4, 2014

Page 7

We would be happy to discuss this request with you in greater detail. Please feel free to contact me via telephone number 610-966-6357 or via email address spepe@borough.emmaus.pa.us. It is our hope that you will consider this request and plan of action.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. M. Pepe', with a stylized flourish extending to the right.

Shane M. Pepe
Borough Manager

Salisbury Township – EPA Sanitary Sewer Administrative Order– Future Plans

Beyond the Administrative Order – 2015+

Salisbury Township, as part of the on-going efforts to maintain the existing sanitary sewer system will be reviewing the information obtained during the AO to focus on the areas of the sanitary sewer system that have the most impact on I&I.

Continuing yearly work

Continuing yearly work on the Township sanitary sewer system includes root control and emergency system repairs.

Ten-year Sanitary Sewer System Maintenance Plan

1. Develop 10-year mainline CCTV and manhole inspection plan, with phase 1 beginning in spring 2015. The 10-year plan will address continued investigations throughout the entire township, unlike the focus of the A.O. which was Area 10.
 - a. Each Spring the Township will video a portion of the existing system to determine what, if any, repairs need to be made to the area. The area to be videoed will be prioritized to areas which have older clay pipe, then to newer PVC pipe. Issues discovered will be recorded and analyzed for rehabilitation or repairs.
 - b. As determined from the inspection program, subsequent rehabilitation or repairs can consist of test and seal, spot repair, lining, grouting, dig repairs, etc. as needed to address the concern.
2. The Township's existing permanent flow meters will continue to monitor flows but will be analyzed on a quarterly basis instead of annually to help discern any potential problems in the basin being metered.
3. Develop a public notice and education program on I&I in effort to cut down on illegal connections. This would be done in lieu of invasive basement inspections.
4. Periodically review the current sewer rates and determine if rate adjustments are necessary to help fund the maintenance plan.