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

March 30, 2018

Rebecca K. Crane Environmental Engineer
NPDES Enforcement Branch (3WP42)
U.S. EPA Region III 1650 Arch Street
Philadelphia, PA 19103-2029

Re: Semi-Annual Progress Report, July - December 2017
September 28, 2009 Order for Compliance
Order Extension on Consent
Docket No. CWA-03-2009-0313DN

Dear Ms. Crane:

Lehigh County Authority (LCA) hereby submits the semi-annual Program Report on behalf of the Western Lehigh Sewerage Partnership (WLSP), a consortium of LCA, Upper Milford Township, Weisenberg Township, Lower Macungie Township (LMT), Upper Macungie Township (UMT), Lowhill Township, Borough of Alburtis, and Borough of Macungie, who are named respondents to the Order, along with the Upper Macungie Township Authority and the Alburtis Sewer Authority for the six month period. The attached report has been prepared by Arcadis (formerly Malcolm Pirnie), I & I Program Consultant, on behalf of the WLSP.

Your granting of the extended deadline for this report to March 31, 2018 is much appreciated.

In November of 2014, LCA along with other Signatories of the City of Allentown jointly requested an extension of the deadline for compliance with the September 2009 Administrative Order. On November 20, 2015, LCA executed the Order Extension on Consent on behalf of the Western Lehigh Sewerage Partnership (WLSP) providing for an interim deadline of December 31, 2017.

While the 5-year term of the original AO has expired, LCA and the WLSP will continue to provide the semi-annual AO Progress Reports consistent with the requested time extension.

This report provides an overview and status report of the ongoing Sewer Rehabilitation & Capacity Assurance Program (SCARP) Outline which has been undertaken to guide the WLSP's effort to control infiltration and inflow in the systems owned and operated by the WLSP entities.

I certify under penalty of law that the document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted, and that the information submitted is true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or wish to discuss any matters presented in this report, please feel free to contact me at lieselgross@lehighcountyauthority.org or 610-398-2503.

Sincerely,

Liesel M. Gross
Chief Executive Officer

cc: WLSP
Pat Mandes, LCA Chief Compliance Officer
Arcadis

UPPER MACUNGIE TOWNSHIP AUTHORITY
LOWHILL TOWNSHIP

United States Environmental Protection Agency – Semi-Annual Report of Activities

July 1, 2017 – December 31, 2017

Western Lehigh Sewerage Partnership

March 2018

Report Prepared By:

ARCADIS

1128 Walnut St, 4th Floor
Philadelphia, PA 19107

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ARCADIS Design & Consultancy for natural and built assets

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Acronym List

AO	Administrative Order
CCTV	Closed Circuit Television
FEB	Flow Equalization Basin
GIS	Geographic Information System
IDF	Intensity/Duration/Frequency
I/I	Inflow/Infiltration
LCA	Lehigh County Authority
LOC	Level of Control
LOS	Level of Service
MOU – I&E	Memorandum of Understanding – Investigation and Evaluation Phase
O&M	Operations and Maintenance
PADEP	Pennsylvania Department of Environmental Protection
PMP	Program Management Plan
RDII	Rainfall Derived Inflow and Infiltration
SCARP	Sewer Capacity Assurance and Rehabilitation Program
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
USEPA	United States Environmental Protection Agency
WLI	Western Lehigh Interceptor
WLSP	Western Lehigh Sewerage Partnership
WWPTP	Wastewater Pre-Treatment Plant
WWTP	Wastewater Treatment Plant

1. Introduction

As required by Administrative Order CWA-03-2009-0313DN (AO) from the United States Environmental Protection Agency (USEPA) as a discharger to the City of Allentown's wastewater system, this report documents and catalogs the activities of the Western Lehigh Sewerage Partnership (WLSP, or Partners) for their Sewer Capacity Assurance and Rehabilitation Program (SCARP) for the period of July 1, 2017 – December 31, 2017, summarizes previously conducted activities, and reports on upcoming planned efforts.

The WLSP has completed several multi-year efforts which have been captured in past semiannual reports and which have been presented at regulatory update meetings with both PADEP and USEPA, the latest of which occurred on September 12, 2016, and on June 14, 2017. These include leakage characterization work in 2012, hydraulic modeling for peak flow management planning in 2013, identification of feasible solutions in 2014, evaluation of feasible alternatives in 2015, and funding evaluations and coordination of the WLSP plans with City of Allentown plans in 2016. Work in 2017 included establishing funding plans, determining the SCARP 25 year Improvements Implementation Outline, defining scopes and budgets for the 2017-2020 planned capital projects, implementing various Partner Source Reduction Program projects, implementing phase one of an easement clearing project, implementing the rehabilitation of LCA trunk lines, designing the refurbishment of the Park Pump Station, planning the condition assessment of the Park Pump Station force main, analyzing alternative conveyance capacity improvement projects, preliminary design on the Park Pump Station force main, and attempting reconciliation of the City and WLSP coordinated improvements plans with the other Allentown Signatories.

2. Progress Toward Eliminating Inflow

2.1. Identification of Inflow Sources

The flow meter analysis conducted during the SSES Prioritization Study and reported in the July 2010 USEPA Semi-Annual Report formed the primary initiation and focus of inflow identification and removal. Inflow source identification activities have been ongoing since then, including during this reporting period. In addition to those basins whose 2009 comprehensive flow data analysis indicated evidence of inflow, Partners have extended their inflow identification efforts into lower prioritized areas.

Primary suspected sources of inflow were roof leader connections, storm drain connections, sump pump connections, and inundated manhole covers. These sources have been located using smoke testing, basement inspections and above grade wet weather observation, respectively. No piped streams or french drains were indicated by the flow meter analysis, nor have been since suspected or located.

2.1.1. Basement Inspections

Results of completed basement inspections were documented in previous USEPA progress reports. Basement inspections in Upper Macungie Township and Lower Macungie Township are still ongoing.

2.1.2. Above Grade Wet Weather Observations

Inundated manhole covers during rainfall events were indicated by the 2009 flow data analysis in 93 catchments. Above Grade Wet Weather Observations were completed for these catchments to identify inflow sources such as ponding and sheet runoff. Findings from these observations have been and are being used to raise, seal, or otherwise repair manholes to eliminate inflow potential.

2.1.3. Smoke Testing

Smoke testing to locate cross-connected storm sewers and roof drains was completed and the results documented in previous USEPA progress reports.

2.2. Elimination of Inflow Sources

Elimination of inflow sources began shortly after the identification process began, and this work continues on an asset by asset basis using a variety of mechanisms as source locations continue to be identified. Rehabilitation occurs in assets that display structural or operations and maintenance defects related to inflow. This work is being conducted in advance of the SCARP *Implementation Outline*. Corrective actions so far have included frame and cover repair/replacement/raising, inflow preventer dish insertion, and sump

pump disconnections. Basement disconnections are being completed voluntarily by property owners or under existing regulations governing inspection and corrective measures of the sale of property. During this period, as shown in Table 2-1, 31 sources of inflow were eliminated, bringing the total number of inflow sources eliminated under the SCARP to 959 separate and distinct sources.

Table 2-1: Inflow Elimination – July 2017 – December 2017

Municipalities	Number of Basement Disconnections	Number of Manhole Dishes Installed	Number of Manhole Frame and Covers Reset/Replaced	Cleanout Repair / Cap Replacement	Other Lateral Repairs
Alburtis	0	0	0	0	0
Lower Macungie Township	0	0	1	8	0
Lowhill	0	0	0	0	0
Macungie	0	0	0	0	0
Upper Macungie Township	1	0	20	0	0
Upper Milford	0	0	0	0	0
Weisenberg	0	0	0	0	0
Western Lehigh Interceptor	0	0	1	0	0

Inflow eliminations completed during this period are detailed in Tables 2-2 through 2-4 and shown in Figure 2-1. Inflow eliminations conducted since the start of the SCARP are summarized in Table 2-5 and shown in Figure 2-2. For inflows from private-sources, sufficient progress continues to be made via voluntary disconnections and sale of property disconnections, minimizing the need for additional or compulsory measures so far. These voluntary approaches are intended to be the sole method of correction. In some instances, basement sump pumps will be permitted to remain in place when disconnection is not technically or economically feasible. One of two identified roof drains have been disconnected. Macungie and Alburtis have completed repairs to all of their defective cleanouts. Lower Macungie is currently repairing defective cleanouts that are presently within their system jurisdiction. The remainder of the cleanouts in both Upper Macungie and Lower Macungie are mostly in portions of the system that are not yet turned over to the municipality and are the responsibility of developers to make the necessary repairs as part of their remaining punch list items. Correction notices have been issued to these developers.

Table 2-2: Inflow Elimination – Basement Disconnections

Basement Disconnections –July 2017 to December 2017			
Municipality	**Catchment**	**Type of Connection Eliminated**	**Number of Properties**
Lower Macungie Township	UMT 08	Sump Pump Disconnection	1
Total			**1**

Table 2-3: Inflow Elimination – Lateral Repair

Lateral Repair– July 2017 to December 2017		
Municipality	**Address**	**Repair Type**
Lower Macungie Township	5272 Spring Ridge Drive E.	Install Cleanout Cap
Lower Macungie Township	5536 Indian Creek Road	Install Cleanout Cap (3)
Lower Macungie Township	6731 Stein Way	Install Cleanout Cap
Lower Macungie Township	8139 Heritage Drive	Install Cleanout Cap
Lower Macungie Township	8083 Heritage Drive	Install Cleanout Cap
Lower Macungie Township	8085 Heritage Drive	Install Cleanout Cap
Total		**8**

Table 2-4: Inflow Elimination – Manhole Frame & Cover Reset/Replace

Manhole Frame & Cover Reset/Replace – July 2017 to December 2017		
Municipality	**Manhole ID**	**Repair Type**
Lower Macungie Township	L-207	Reset Frame
Lower Macungie Township	MH CR2-D	Replace broken split-ring riser
Upper Macungie Township	4 MHs	Precast Grade Ring
Upper Macungie Township	16 MHs	Replace Frame w/ Composite Frame and Cover
Total		**22**

Table 2-5: Inflow Elimination - SCARP to Date

Municipalities	Number of Basement Disconnections	Number of Manhole Dishes Installed	Number of Manhole Frame and Covers Reset/Replaced	Cleanout Repair / Cap Replacement	Other Lateral Repairs
Alburtis	5	39	15	27	0
Lower Macungie Township	45	156	42	47	3
Lowhill	0	0	0	0	0
Macungie	4	36	13	35	13

Municipalities	Number of Basement Disconnections	Number of Manhole Dishes Installed	Number of Manhole Frame and Covers Reset/Replaced	Cleanout Repair / Cap Replacement	Other Lateral Repairs
Upper Macungie Township	91	159	179	3	5
Upper Milford	0	0	1	0	0
Weisenberg	0	0	0	0	0
Western Lehigh Interceptor	0	10	31	0	0
Total	**145**	**400**	**281**	**112**	**21**

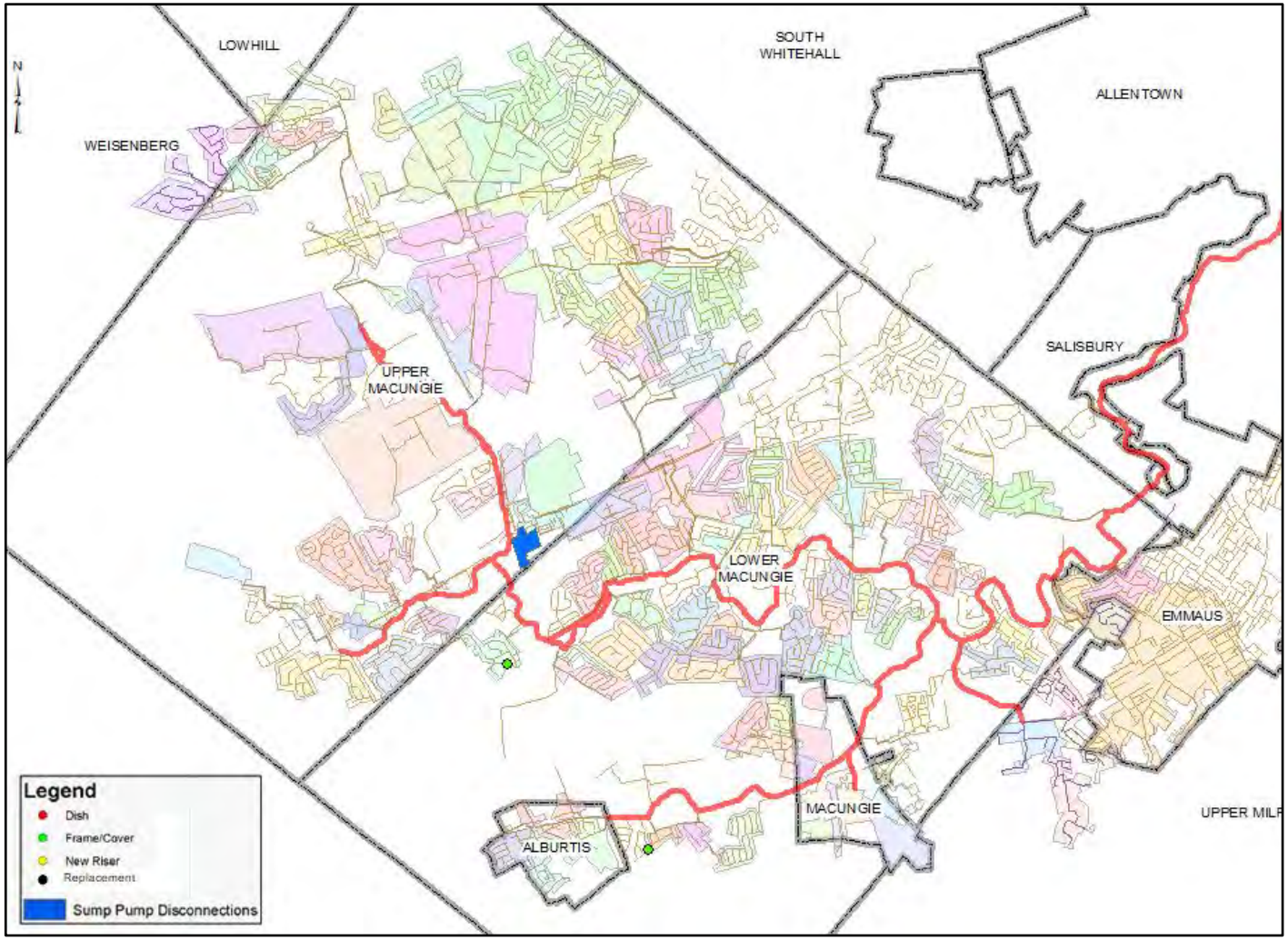

Figure 2-1: Inflow Elimination July 2017 to December 2017*

*Lateral Repairs and UMT Frame and Cover work not shown

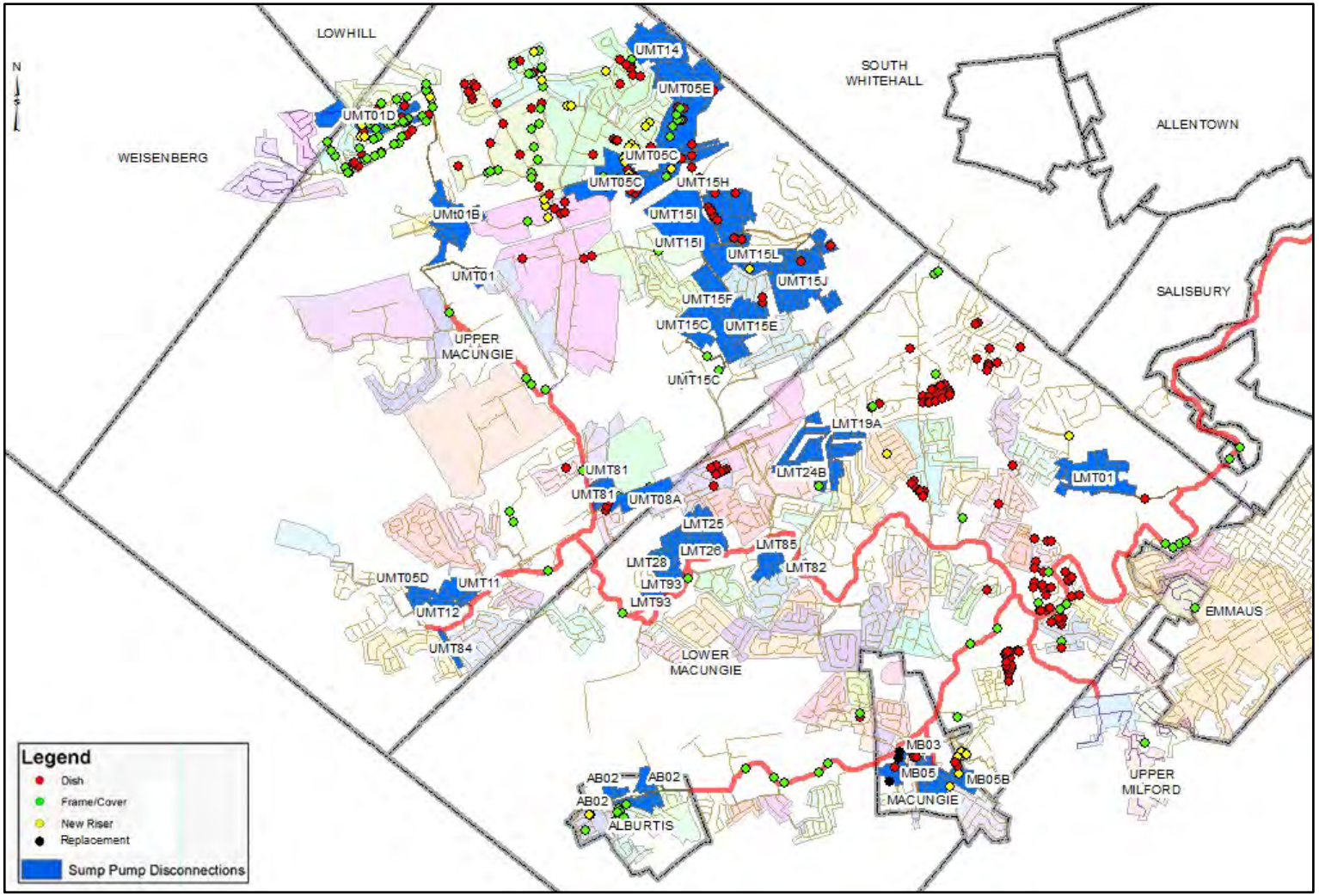

Figure 2-2: Inflow Elimination SCARP to Date*

*Lateral Repairs and UMT Frame and Cover work not shown

2.3. Path Forward

Sump pump disconnections will continue to proceed, with the point of sale inspections and disconnections serving to continuously eliminate these sources of inflow and ensure reconnections are minimized. The installation of manhole dishes and the replacement and resetting of frames and covers will continue throughout Phase 1 until all inflow sources identified by the above grade wet weather observations are addressed. Alburtis and Macungie have completed all cleanout cap and stem repairs; Lower Macungie Township has completed all cleanout cap and stem repairs identified on the initial list, however the township continues to make repairs as they find them.

No further storm sewer expansion is anticipated; all inflow corrections will be re-routed to the existing storm sewer system or remain on the surface.

3. Progress Toward Eliminating Infiltration

As it is most impractical to time CCTV during rain events, and as the pipes are often flowing so full as to render the inspection nearly worthless, and as dry weather CCTV seldom reveals infiltration sources, experienced engineers rely on flow metering and other hydraulically-based SSES methods to locate significant I/I sources. These same realities apply to lateral leakage as well.

Rehabilitation will be done holistically; rehabilitation to mainlines, laterals and manholes will be completed as determined by flow and SSES findings. The specific types of rehabilitation utilized on the system will be detailed in the SCARP *Implementation Outline*. Lateral inspections will not be performed, but laterals connected to a mainline receiving rehabilitation will be rehabilitated if determined to be leaking.

3.1. Identification of Infiltration Sources

All infiltration source identification activities have been completed and have been documented in previous USEPA progress reports. As expected, low level infiltration has been found systemically throughout the WLSP system. The system generally only demonstrates a rainfall derived inflow and infiltration (RDII) reaction after significant or prolonged precipitation. Only limited portions of the system exhibit high levels of infiltration during non-rainy periods (baseline infiltration).

3.2. Elimination of Infiltration Sources

As outlined in the SCARP, the SCARP *Implementation Outline* will contain a description of the remaining steps of each Partner's Source Reduction Program, each of which are well underway as previously reported. Assets rehabilitated (and therefore infiltration sources reduced) during this period are shown in Table 3-1.

Rehabilitation of roughly 42,800 feet of the WLI trunklines, 1,200 feet of collection sewers in Upper Macungie Township, and 8,600 feet of collection sewers in Lower Macungie Township, based on the test and seal method of rehabilitation which contributes to the elimination of infiltration was completed as part of the project awarded in the first half of 2016. Less than 1% of the joints were found to be leaking.

Table 3-1: Rehabilitation Contributing to Infiltration Reduction – July 2017 to December 2017

Municipalities	Number of Chimney Seals*	Number of Manholes Lined	Number of Manholes Grouted	Cured-in-Place Pipe Line (LF)	Lateral Replacement (to Right-of-way)	Sewer Line Replacement (LF)	Mainline Test and Seal (LF)**
Alburtis	0	0	0	0	0	0	0

Municipalities	Number of Chimney Seals*	Number of Manholes Lined	Number of Manholes Grouted	Cured-in-Place Pipe Line (LF)	Lateral Replacement (to Right-of-way)	Sewer Line Replacement (LF)	Mainline Test and Seal (LF)**
Lower Macungie Township	0	11	13	18,649	8	380	8,645
Lowhill	0	0	0	0	0	0	0
Macungie	0	0	0	0	0	0	0
Upper Macungie Township	183	66	6	8,449	1	0	1,234
Upper Milford	0	0	0	0	0	0	0
Weisenberg	0	0	0	0	0	0	0
Western Lehigh Interceptor	0	0	0	0	0	0	42,849

*Quantities reported include sealing the frame/pavement joint

** Includes work conducted prior to this reporting period not previously documented

Assets rehabilitated (and therefore infiltration reduced) since SCARP inception are listed in Table 3-2 and shown in Figure 3-1.

Table 3-2: Asset Rehabilitation Contributing to Infiltration Reduction – SCARP to Date

Municipalities	Number of Chimney Seals*	Number of Manholes Lined	Number of Manholes Grouted	Cured-in-Place Pipe Line (LF)	Lateral Replacement (to Right-of-way)	Sewer Line Replacement (LF)	Mainline Test and Seal (LF)
Alburtis	0	3	38	16,948	0	0	0
Lower Macungie Township	67	41	122	52,436	46	1,739	8,645
Lowhill	0	0	0	0	0	0	0
Macungie	0	13	0	9,207	7	933	0
Upper Macungie Township	1,187	90	183	58,636	8	0	1,234
Upper Milford	2	0	0	0	0	0	0
Weisenberg	0	0	0	0	0	0	0
Western Lehigh Interceptor	0	1	2	0	0	0	42,849
Total	**1,256**	**148**	**345**	**137,227**	**61**	**2,672**	**52,728**

*Quantities reported include sealing the frame/pavement joint

Infiltration eliminations completed during this period are detailed in Tables 3-3 through 3-8; and shown in Figure 3-2.

Table 3-3: Manhole Rehabilitation Contributing to Infiltration Reduction

Manhole Repairs – July 2017 to December 2017		
Municipality	**Manhole ID**	**Repair Type**
Lower Macungie Township	AO-92	Seal Frame
Lower Macungie Township	AO-159	Seal Frame
Lower Macungie Township	AO-160	Seal Frame
Lower Macungie Township	AO-162	Seal Frame
Lower Macungie Township	AO-91	Seal Frame
Lower Macungie Township	AO-90	Seal Frame
Lower Macungie Township	MPF-47	Raise/ Seal
Lower Macungie Township	MPF-48	Raise/ Seal
Lower Macungie Township	AO-164	Seal Frame
Lower Macungie Township	AO-165	Seal Frame
Lower Macungie Township	AOW-28	Raise/ Seal
Lower Macungie Township	AO-171	Seal Frame
Lower Macungie Township	AO-173	Seal Frame
Upper Macungie Township	6 MHs	Drill, Grout, and Parge
Upper Macungie Township	48 MHs	Slip Line Annular Space Repair
Total		**67**

Table 3-4: Infiltration Elimination – Sewer Line CIPP Lining

Sewer Line CIPP Lining – July 2017 to December 2017		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	HC18A_WEV18	150
Lower Macungie Township	WEV14_BSR6D	378.2
Lower Macungie Township	SH121_SH122	311.6
Lower Macungie Township	SH133_SH124	268.4
Lower Macungie Township	SH132_SH131	301.4
Lower Macungie Township	SH97_SH98	345
Lower Macungie Township	SH102_SH103	335.5
Lower Macungie Township	SH99_SH100	324.9
Lower Macungie Township	SH94_GR12	315.3
Lower Macungie Township	AO148_AO147D	173.5
Lower Macungie Township	AO151_AO150	367.6
Lower Macungie Township	AO142_AO112	253.6
Lower Macungie Township	AO144_AO142	268.1
Lower Macungie Township	AO145_AO142	206.6
Lower Macungie Township	AO147D_AO114	249.5
Lower Macungie Township	AO116_AO115	401.4
Lower Macungie Township	AO140_AO139	130.5

Sewer Line CIPP Lining – July 2017 to December 2017		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	AO135_AO132D	128.6
Lower Macungie Township	AO134_AO133	177.1
Lower Macungie Township	AO132D_AO131	345.5
Lower Macungie Township	AO130_AO127D	175.2
Lower Macungie Township	WEV19-D_HC18A	184.5
Lower Macungie Township	AO171_AO170	402.8
Lower Macungie Township	AO174_AO173	252.2
Lower Macungie Township	AO122_AO121	177
Lower Macungie Township	AO121A_AO121	163.1
Lower Macungie Township	AO128_AO127D	245.3
Lower Macungie Township	AO123_AO119	170.3
Lower Macungie Township	AO98D_AO97	254.7
Lower Macungie Township	AO103_AO102	365.9
Lower Macungie Township	AO118_AO117	259.1
Lower Macungie Township	AO89_AO93	202
Lower Macungie Township	AO105_AO104	101
Lower Macungie Township	AO127D_AO110	243.3
Lower Macungie Township	SH96_SH95	261.4
Lower Macungie Township	SH95_SH94	258.4
Lower Macungie Township	SH98_SH99	351.2
Lower Macungie Township	SH100_SH101	185.2
Lower Macungie Township	SH101_SH139	167.7
Lower Macungie Township	SH139_SH140	181.3
Lower Macungie Township	SH141_SH142	299.1
Lower Macungie Township	SH101_SH102	335.4
Lower Macungie Township	SH103_SH104	211.3
Lower Macungie Township	SH128_SH122	210.9
Lower Macungie Township	SH129_SH128	321.9
Lower Macungie Township	SH130_SH129	249.7
Lower Macungie Township	SH131_SH130	197.1
Lower Macungie Township	SH126_SH127	229.5
Lower Macungie Township	SH125_SH126	312
Lower Macungie Township	SH124_SH125	288.5
Lower Macungie Township	SH123_SH124	245.8
Lower Macungie Township	SH122_SH123	244.8
Lower Macungie Township	SH120_SH121	60.8
Lower Macungie Township	WEV18_WEV17	129
Lower Macungie Township	WEV17_WEV16	111.5
Lower Macungie Township	WEV16_WEV15	226
Lower Macungie Township	AO149_AO147D	217.8
Lower Macungie Township	AO150_AO149	169.1

Sewer Line CIPP Lining – July 2017 to December 2017		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	AO115_AO114	165.4
Lower Macungie Township	AO146_AO145	187.2
Lower Macungie Township	AO139_AO138	192.2
Lower Macungie Township	AO136_AO135	129.3
Lower Macungie Township	AO133_AO132D	142.7
Lower Macungie Township	AO131_AO110	124.5
Lower Macungie Township	AO129_AO128	199.4
Lower Macungie Township	AO110_AO109	110.6
Lower Macungie Township	AO109_AO108	231.1
Lower Macungie Township	AO108_AO107	134.6
Lower Macungie Township	AO120_AO119	186.1
Lower Macungie Township	AO119_AO118	209.3
Lower Macungie Township	AO117_AO106	95
Lower Macungie Township	AO124_AO123	160
Lower Macungie Township	AO99_AO98D	125.6
Lower Macungie Township	AO97_AO96	253.2
Lower Macungie Township	AO95_AO96	86.9
Lower Macungie Township	AO94_AO95	104
Lower Macungie Township	AO93_AO94	111
Lower Macungie Township	AO92_AO91	117.5
Lower Macungie Township	AO104_AO89	135
Lower Macungie Township	AO102_AO96	333.9
Lower Macungie Township	AO157_AO156	292.7
Lower Macungie Township	AO156_AO155	233.3
Lower Macungie Township	AO161_AO160	126.5
Lower Macungie Township	AO121_AO120	154
Lower Macungie Township	AO126_AO108	120
Lower Macungie Township	AO170_AO169	94
Upper Macungie Township	FOG211D_FOG211D-1	84
Upper Macungie Township	FOG211_FOG211A	61
Upper Macungie Township	FOG211A_FOG211B	41
Upper Macungie Township	FOG211B_FOG211C	30
Upper Macungie Township	FOG211D_FOG211E	109
Upper Macungie Township	FOG211E_FOG212	130
Upper Macungie Township	FOG212_FOG213	400
Upper Macungie Township	FOG213_FOG214	321
Upper Macungie Township	APW021-8_APW021-7	92
Upper Macungie Township	FOG158_FOG159	113
Upper Macungie Township	FOG156_FOG154E	219
Upper Macungie Township	FOG154A_FOG154	244
Upper Macungie Township	SCR403_SCR402A	241

Sewer Line CIPP Lining – July 2017 to December 2017		
Municipality	**Segment ID**	**Length (Feet)**
Upper Macungie Township	SCR402A_SCR402	160
Upper Macungie Township	SCR402_SCR401	400
Upper Macungie Township	SCR401_SCR400	400
Upper Macungie Township	SCR400_SCR301	183
Upper Macungie Township	LPE016B_LPE016A	220
Upper Macungie Township	LPE016A_LPE016	107
Upper Macungie Township	LPE006_LPE002	270
Upper Macungie Township	LPE002_LPE001	86
Upper Macungie Township	LPE003_LPE004	334
Upper Macungie Township	LPE004_LPE005	161
Upper Macungie Township	LPE013_LPE022	190
Upper Macungie Township	LPE022_LPE023	335
Upper Macungie Township	LPE008_LPE010	231
Upper Macungie Township	LPE010_LPE011	165
Upper Macungie Township	CMW023_CMW022	250
Upper Macungie Township	CMW022_CMW021	260
Upper Macungie Township	CMW021_CMW013	110
Upper Macungie Township	CMW027_CMW026	319
Upper Macungie Township	CMW026_CMW025	280
Upper Macungie Township	CMW025_CMW023	140
Upper Macungie Township	LPE019_LPE020	176
Upper Macungie Township	CMW006_CMW005	210
Upper Macungie Township	CMW005_CMW004	100
Upper Macungie Township	CMW004_CMW003	290
Upper Macungie Township	CMW001_CMW034A	64
Upper Macungie Township	CMW009_CMW008	104
Upper Macungie Township	CMW008_CMW007	75
Upper Macungie Township	CMW013_CMW012	80.5
Upper Macungie Township	TRT095_TRT284-4	239
Upper Macungie Township	IMH58_TRT278	140
Upper Macungie Township	TRT278_TRT278A	70
Upper Macungie Township	TRT111_TRT11B	214
Total		**27,098**

Table 3-5: Infiltration Elimination – Lateral Repair

Lateral Repair –July 2017 to December 2017		
Municipality	**Address**	**Repair Type**
Upper Macungie Township	1324 Cobbler Lane	Repair Lateral/ Install PVC
Total		**1**

Table 3-6: Infiltration Elimination – Sewer Line Replacement

Sewer Line Replacement –July 2017 to December 2017		
Municipality	**Segment ID**	**Main Replacement (ft)**
Lower Macungie Township	AO-141 to AO-140	80
Lower Macungie Township	HB-17B to HB-20 (Pipe Offset)	(Repair Offset Joint)
Lower Macungie Township	SH-141 to SH-140	300
Total		**380**

Table 3-7: Infiltration Elimination – Manhole Lining

Manhole Lining – July 2017 to December 2017		
Municipality	**Manhole ID**	**Repair Type**
Lower Macungie Township	AO-155	Full Depth Lining
Lower Macungie Township	AO-96	Full Depth Lining
Lower Macungie Township	AO-158	Full Depth Lining
Lower Macungie Township	AO-153	Full Depth Lining
Lower Macungie Township	AO-152	Full Depth Lining
Lower Macungie Township	AO-97	Full Depth Lining
Lower Macungie Township	AO-95	Full Depth Lining
Lower Macungie Township	AO-94	Full Depth Lining
Lower Macungie Township	AO-55	Full Depth Lining
Lower Macungie Township	AO-89	Full Depth Lining
Lower Macungie Township	AOW-028	Full Depth Lining
Upper Macungie Township	183 MHs	Epoxy Chimney Lining
Upper Macungie Township	3 MHs	Full Depth Lining
Upper Macungie Township	63 MHs	Base Section Lining
Total		**260**

Table 3-8: Infiltration Elimination – Mainline Test & Seal

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	GM72 GM108	204
Lower Macungie Township	GM109 L-251	284
Lower Macungie Township	GM108 GM109	283
Lower Macungie Township	MBF120 MBF119-D	278
Lower Macungie Township	AOW19 AOW18	189

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	AOW18 AOW17	364
Lower Macungie Township	MBF108 L-79	88
Lower Macungie Township	MBF83 L-78	124
Lower Macungie Township	F-B4 F-B3	401
Lower Macungie Township	F-B3 F-B2	215
Lower Macungie Township	F-B1 L-107	140
Lower Macungie Township	FB2 FB1	55
Lower Macungie Township	MBF31 MBF30	131
Lower Macungie Township	MBF30 L-65A	263
Lower Macungie Township	MBF16 MBF2	108
Lower Macungie Township	MBF17 MBF16	172
Lower Macungie Township	MBF1 MBF1A	110
Lower Macungie Township	MBF49 MBF48	120
Lower Macungie Township	MBF2 MBF1	60
Lower Macungie Township	TWC58 L-189	246
Lower Macungie Township	C-43	63
Lower Macungie Township	WBM48-D WBM47	166
Lower Macungie Township	HY2 HY1-D	110
Lower Macungie Township	HY3 HY2	198
Lower Macungie Township	LM12 L-173	192
Lower Macungie Township	WBM1 L-205	13
Lower Macungie Township	WBM2 WBM1A	147
Lower Macungie Township	WBM1A WBM1	397
Lower Macungie Township	PM30A PM30	95
Lower Macungie Township	MBC2-2 MBC2-1	211
Lower Macungie Township	VF46 L-276	62
Lower Macungie Township	VF45 VF46	299
Lower Macungie Township	AO88 L-279	256
Lower Macungie Township	ET5 ET4A	106
Lower Macungie Township	ET4A ET4	110
Lower Macungie Township	ET4 ET3	179
Lower Macungie Township	ET2 ET1	92
Lower Macungie Township	SH85 SH84	170
Lower Macungie Township	SH84 SH83	192

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Lower Macungie Township	FH1 L283	287
Lower Macungie Township	MBF48 MBF47	108
Lower Macungie Township	MBF47 to MBF47A	36
Lower Macungie Township	BW2 BW1	130
Lower Macungie Township	TWC21 TWC59	203
Lower Macungie Township	TWC59 TWC60	366
Lower Macungie Township	TWC61 L-184	97
Lower Macungie Township	TWC60 TWC61	379
Lower Macungie Township	F-B4A to F-B4	146
Upper Macungie Township	3558 U-107	227
Upper Macungie Township	3568 U-100	268
Upper Macungie Township	4558 4166	32
Upper Macungie Township	3815 U-72	254
Upper Macungie Township	3786 3787	62
Upper Macungie Township	3787 3788	179
Upper Macungie Township	3788 U-88	212
Western Lehigh Interceptor	L-189 to L-188	312
Western Lehigh Interceptor	L-152 L-151	186
Western Lehigh Interceptor	L-153 L-152	220
Western Lehigh Interceptor	L-154 L-153	223
Western Lehigh Interceptor	L-151 L-150	306
Western Lehigh Interceptor	L-155 L-154	235
Western Lehigh Interceptor	L-156 L-155	260
Western Lehigh Interceptor	L-157 L-156	313
Western Lehigh Interceptor	L-159 L-158	272
Western Lehigh Interceptor	L-158 L-157	417
Western Lehigh Interceptor	L-161 L-160	219
Western Lehigh Interceptor	L-160 L-159	401
Western Lehigh Interceptor	L-162 L-161	347
Western Lehigh Interceptor	L-163 L-162	302
Western Lehigh Interceptor	L-165 L-164	136
Western Lehigh Interceptor	L-164 L-163	365
Western Lehigh Interceptor	L-167 L-166	235
Western Lehigh Interceptor	L-168 L-167	260

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Western Lehigh Interceptor	L-166 L-165	308
Western Lehigh Interceptor	L-174 L-173	79
Western Lehigh Interceptor	L-175 L-174	184
Western Lehigh Interceptor	L-176 L-175	278
Western Lehigh Interceptor	L-170 L-169	319
Western Lehigh Interceptor	L-169 L-168	430
Western Lehigh Interceptor	L-173 L-172	156
Western Lehigh Interceptor	L-172 L-171	245
Western Lehigh Interceptor	L-171 L-170	290
Western Lehigh Interceptor	U-45 U-44	204
Western Lehigh Interceptor	U-46 U-45	260
Western Lehigh Interceptor	U-47 U-46	114
Western Lehigh Interceptor	U-48 U-47	373
Western Lehigh Interceptor	U-44 U-43	255
Western Lehigh Interceptor	U-43 U-42	47
Western Lehigh Interceptor	U-42 U-41	293
Western Lehigh Interceptor	U-41 U-40	304
Western Lehigh Interceptor	L-179 L-178	269
Western Lehigh Interceptor	L-178 L-177	333
Western Lehigh Interceptor	U-39 U-38	53
Western Lehigh Interceptor	U-38 U-37	99
Western Lehigh Interceptor	U-37 U-36	232
Western Lehigh Interceptor	U-40 U-39	339
Western Lehigh Interceptor	MS1 L-181	337
Western Lehigh Interceptor	U-36 U-35	243
Western Lehigh Interceptor	U-34 U-33	243
Western Lehigh Interceptor	U-35 U-34	244
Western Lehigh Interceptor	U-33 U-32	226
Western Lehigh Interceptor	U-32 U-31A	284
Western Lehigh Interceptor	L-181 L-180	384
Western Lehigh Interceptor	L-180 L-179	386
Western Lehigh Interceptor	U-24A U-24	71
Western Lehigh Interceptor	U-22 U-22A	96
Western Lehigh Interceptor	U-23 U-22	301

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Western Lehigh Interceptor	U-24 U-23	329
Western Lehigh Interceptor	L-140 L-139	68
Western Lehigh Interceptor	U-49 U-48	299
Western Lehigh Interceptor	L-182 MS1	49
Western Lehigh Interceptor	U-25A U-25	121
Western Lehigh Interceptor	U-25 U-24A	205
Western Lehigh Interceptor	U-20A U-19	170
Western Lehigh Interceptor	U-18 U-17	94
Western Lehigh Interceptor	U-17 U-16	105
Western Lehigh Interceptor	U-16 U-15	152
Western Lehigh Interceptor	U-19 U-18	295
Western Lehigh Interceptor	U-13 U-12	24
Western Lehigh Interceptor	U-14 U-13	157
Western Lehigh Interceptor	U-15 U-14	404
Western Lehigh Interceptor	L-149 L-148	174
Western Lehigh Interceptor	L-148 L-147	371
Western Lehigh Interceptor	L-147 L-146	292
Western Lehigh Interceptor	U-7 U-6	69
Western Lehigh Interceptor	U-8 U-7	274
Western Lehigh Interceptor	MS2 L-145	377
Western Lehigh Interceptor	U-9 U-8	273
Western Lehigh Interceptor	L-146 MS2	14
Western Lehigh Interceptor	L-145 L-144	88
Western Lehigh Interceptor	L-136 L-135	260
Western Lehigh Interceptor	L-135 L-134	257
Western Lehigh Interceptor	U-11 U-10	104
Western Lehigh Interceptor	U-12 U-11	182
Western Lehigh Interceptor	U-10 U-9	296
Western Lehigh Interceptor	L-138 L-137	138
Western Lehigh Interceptor	L-137 L-136	256
Western Lehigh Interceptor	R-3 R-4	328
Western Lehigh Interceptor	82A-12 82A-13	300
Western Lehigh Interceptor	82A-13 82A-14	304
Western Lehigh Interceptor	L-142 L-141	299

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Western Lehigh Interceptor	82A-14 82A-15	349
Western Lehigh Interceptor	82A-10 82A-11	350
Western Lehigh Interceptor	82A-11 82A-12	355
Western Lehigh Interceptor	L-134 L-133	307
Western Lehigh Interceptor	82A-6 82A-7	348
Western Lehigh Interceptor	82A-7 82A-8	357
Western Lehigh Interceptor	L-132 L-122	187
Western Lehigh Interceptor	L-133 L-132	237
Western Lehigh Interceptor	82A-5 82A-6	148
Western Lehigh Interceptor	82A-4 82A-5	397
Western Lehigh Interceptor	L-122 MS3	225
Western Lehigh Interceptor	L-121 L-120	253
Western Lehigh Interceptor	82A-16 82A-17	57
Western Lehigh Interceptor	82A-15 82A-16	299
Western Lehigh Interceptor	82A-3 82A-4	339
Western Lehigh Interceptor	MS3 L-121	14
Western Lehigh Interceptor	L-120 L-119	279
Western Lehigh Interceptor	L-119 L-118	277
Western Lehigh Interceptor	L-118 L-117	259
Western Lehigh Interceptor	L-97 L-96	194
Western Lehigh Interceptor	L-98 L-97	237
Western Lehigh Interceptor	L-96 L-95	275
Western Lehigh Interceptor	L-101 L-100	54
Western Lehigh Interceptor	L-99 L-98	162
Western Lehigh Interceptor	L-100 L-99	345
Western Lehigh Interceptor	L-93 L-92	334
Western Lehigh Interceptor	L-92 L-91	321
Western Lehigh Interceptor	L-91 L-90	130
Western Lehigh Interceptor	82A-8 82A-9	358
Western Lehigh Interceptor	82A-9 82A-10	347
Western Lehigh Interceptor	L-94 L-93	121
Western Lehigh Interceptor	L-95 L-94	322
Western Lehigh Interceptor	L-116 L-115	402
Western Lehigh Interceptor	L-104 L-103	282

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Western Lehigh Interceptor	L-103 L-104	280
Western Lehigh Interceptor	L-102 L-101	331
Western Lehigh Interceptor	L-106 L-105	405
Western Lehigh Interceptor	L-105 L-104	394
Western Lehigh Interceptor	L-107 L-106	251
Western Lehigh Interceptor	L-108 L-107	171
Western Lehigh Interceptor	L-113 L-112	93
Western Lehigh Interceptor	L-111 L-110	94
Western Lehigh Interceptor	L-110 L-109	123
Western Lehigh Interceptor	L-109 L-108	303
Western Lehigh Interceptor	U-116 115A	134
Western Lehigh Interceptor	U-112 U-111	304
Western Lehigh Interceptor	U-2R U-3R	262
Western Lehigh Interceptor	U-1R U-2R	473
Western Lehigh Interceptor	U-111 U-110	230
Western Lehigh Interceptor	U-7R U-108	57
Western Lehigh Interceptor	U-6R U-7R	518
Western Lehigh Interceptor	U-110 U-109	99
Western Lehigh Interceptor	U-108 U-109	335
Western Lehigh Interceptor	115A U-115	306
Western Lehigh Interceptor	U-114 U-113	86
Western Lehigh Interceptor	U-3R U-4R	105
Western Lehigh Interceptor	U-5R U-6R	128
Western Lehigh Interceptor	U-4R U-5R	208
Western Lehigh Interceptor	U-115 U-114	400
Western Lehigh Interceptor	L-117 L-116	402
Western Lehigh Interceptor	L-115 L-114	121
Western Lehigh Interceptor	L-114 L-113	409
Western Lehigh Interceptor	10 11	87
Western Lehigh Interceptor	9 10	294
Western Lehigh Interceptor	8 9	308
Western Lehigh Interceptor	11 12	321
Western Lehigh Interceptor	L-125 L-126	77
Western Lehigh Interceptor	L-124 L-125	253

Mainline Test & Seal – July 2017 to December 2017*		
Municipality	**Segment ID**	**Length (Feet)**
Western Lehigh Interceptor	L-123 L-124	195
Western Lehigh Interceptor	L-126 L-127	94
Western Lehigh Interceptor	U-55 U-54	373
Western Lehigh Interceptor	U-70 U-69	400
Western Lehigh Interceptor	L-286 to L-285	96
Western Lehigh Interceptor	L-285 to L-284	160
Western Lehigh Interceptor	L-292 to L-291	91
Western Lehigh Interceptor	L-291 to L-290	254
Western Lehigh Interceptor	L-190 to L-189	303
Western Lehigh Interceptor	L-219 to L-218	272
Western Lehigh Interceptor	L-43 to L-42	179
Western Lehigh Interceptor	L-42 to L-41	107
Western Lehigh Interceptor	L-79 to L-78	310
Western Lehigh Interceptor	L-241 to L-240	213
Western Lehigh Interceptor	L-204 to L-203	284
Western Lehigh Interceptor	L-32 to L-31	340
Western Lehigh Interceptor	L-50 to L-49	419
Western Lehigh Interceptor	L-255 to L-254	340
Western Lehigh Interceptor	U-4R U-112	238
Western Lehigh Interceptor	L-112 L-111	147
Western Lehigh Interceptor	U-116 U-115	335
Total		**52,728**

*Includes work conducted prior to this reporting period not previously documented

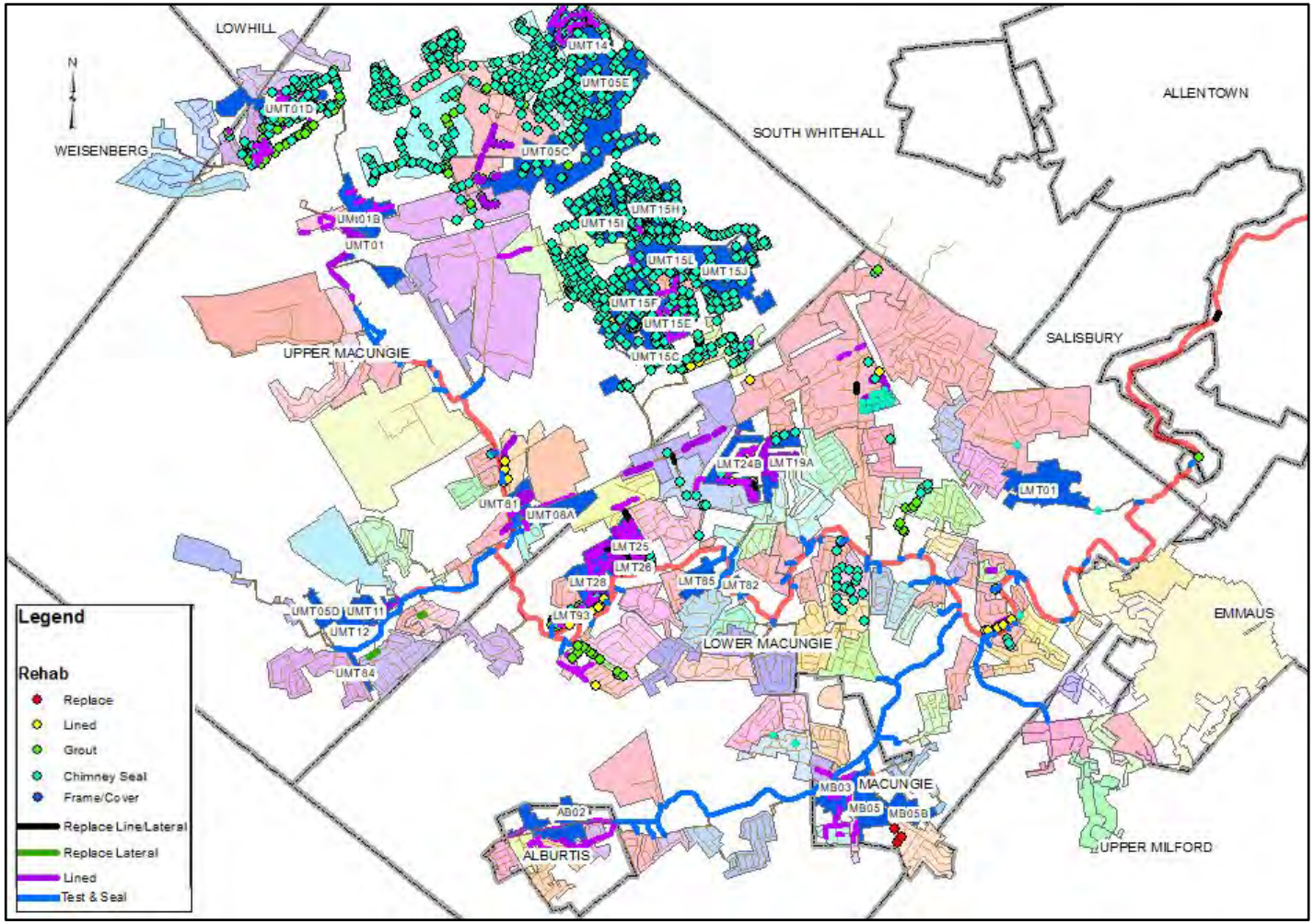

Figure 3-1: Rehabilitation Contributing to Infiltration Reduction SCARP to Date*

***Lateral Repairs and UMT Manhole Lining work not shown

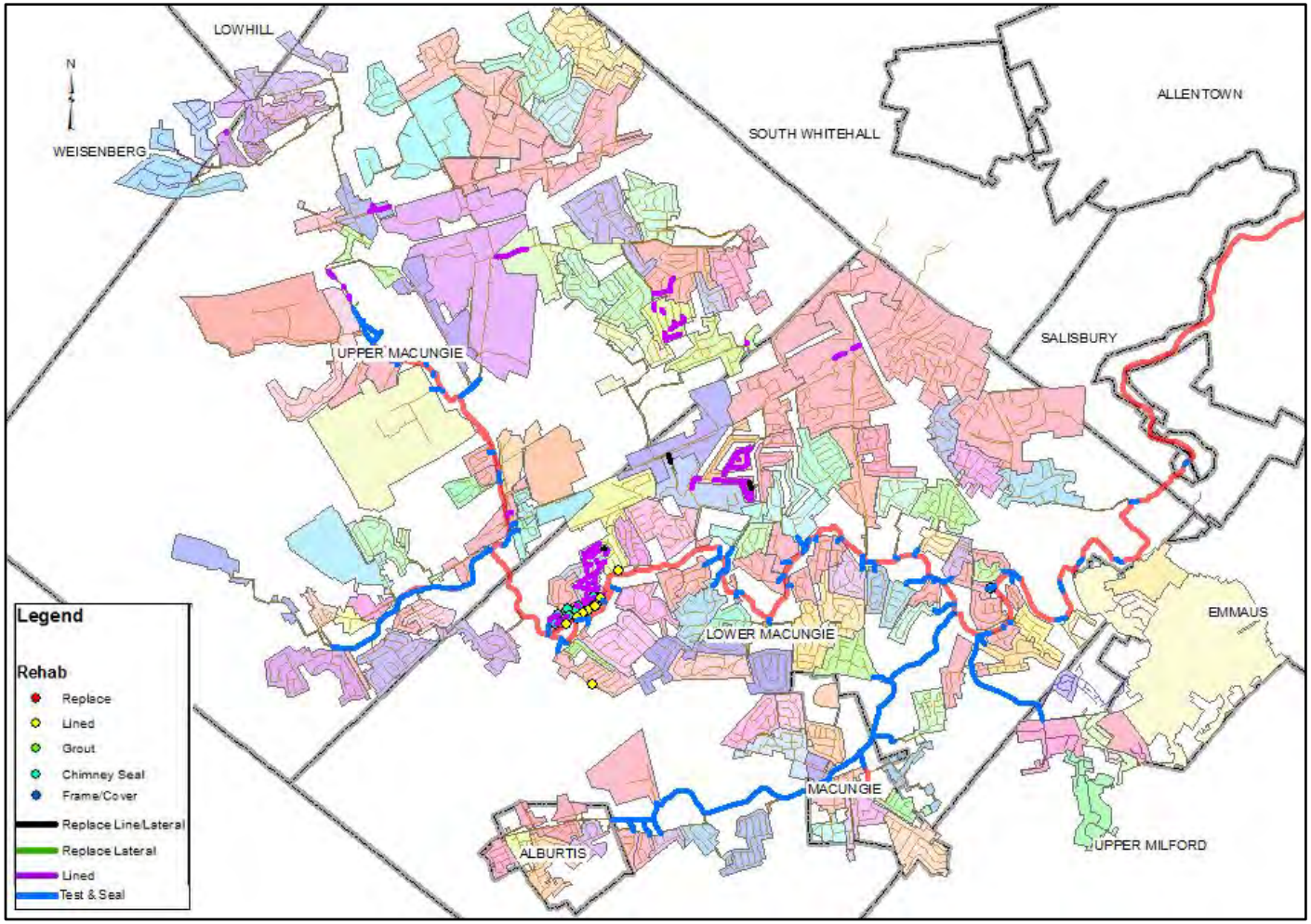

Figure 3-2: Rehabilitation Contributing to Infiltration Reduction July 2017 to December 2017*

***Lateral Repairs and UMT Manhole Lining work not shown

3.3. Path Forward

Based on USEPA's November 2nd, 2017 letter to the Partners which proposed a significantly revised approach for the City on behalf of the SCARP, and in turn, the approach of the partnership as a whole, planning efforts have been placed on hold until further clarification and discussions can be held between the Partners and USEPA. These discussions are expected to be held in the first half of 2018. The results of which will dictate the WLSP's path forward pertaining to the SCARP. There are some projects which have already started which will continue through this period.

A pilot WLI rehabilitation program, based on the test and seal method of rehabilitation, which began in the second half of 2017, is expected to be completed in the first half of 2018. Results from this pilot program will be presented in a future report.

The first phase of a WLI easement clearing project was completed this period, and future phase are expected to be completed over the next two years. The easement clearing project is intended to support ongoing and future O&M efforts.

The Park Pump Station (PPS) rehabilitation design has been completed and the project is under contract for construction starting in 2018. Additionally, the PPS force main evaluation has been moving forward through investigation of alternative technologies to inspect the condition of the main as well as alternative operating strategies to dewater the force main to allow for a possible manned internal inspection approach. The alternative inspection approaches are still under consideration.

Alternative approaches for relieving WLI capacity issues in the Trexlertown area have been investigated. Discussions regarding the installation of a parallel gravity interceptor vs. building the Iron Run Pump Station are ongoing. It is expected that this decision will be made in the first half of 2018 and that design work will follow.

4. Progress Towards System Characterization

4.1. Flow Monitoring Program

Dry and wet weather flows in the WLSP system were well characterized by the 2009 Comprehensive Flow Study (reported in Appendix B of the July 2011 USEPA Semi-Annual Report). A rehabilitation effectiveness metering program began in March 2017. Analysis of the data is ongoing and will be reported in a future report.

4.2. Condition Assessment

No significant new condition assessments were completed in this reporting period.

4.3. Updated System Information

No new system information was discovered during this reporting period. No changes to the system have been made during this reporting period. If new system information is discovered, maps depicting the changes will be presented.

4.4. Alternative Analysis

The evaluation of alternatives and hydraulic modeling activities undertaken by the WLSP in cooperation with the COA have been previously reported as well as presented to PADEP and USEPA.

5. Progress Towards Cooperative Management of Flows

5.1. Cooperative Efforts

5.1.1. WLSP

All work conducted by the WLSP is a cooperative effort between the nine municipal entities listed below.

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

The WLSP holds two regularly scheduled planning and review meetings per month.

1. WSLP Municipal Leaders Meeting
2. WLSO Engineers Workshop

5.1.2. City of Allentown and other Allentown Signatories

To increase the communication and collaboration between the COA, LCA and the other Signatories, LCA has organized three monthly meetings between the following groups.

1. LCA/City AO Program Managers
2. City Signatories' Municipal Leaders
3. City Signatory Engineers Workshop (as needed)

Meeting agendas for this period are provided in Appendix A.

6. Revenue and Expenditures

6.1. Financial Information for Period July 1, 2017 to December 31, 2017

Table 6-1: SCARP Related Costs – July 2017 – December 2017

	Upper Macungie Township	Lower Macungie Township	Borough of Macungie	Borough of Alburtis	Lehigh County Authority et al*
Revenues thru sewer fees and charges	$2,925,826	$2,230,280	$446,522	$244,005	$3,081,397
Revenues thru other sources	$1,351,065	$3,982	$6,391	$22,853	$755,122
Total Revenue	**$4,276,891**	**$2,234,262**	**$452,913**	**$266,858**	**$3,836,518**
Costs for Engineering & Legal Services	$104,351	$27,014	$50,569	$69,506	$560,708
Costs for Rehab/ Repair/Replacement	$582,528	$573,172	$51,290	$2,492	$505,541
Costs for other SCARP-related and O&M activities	$3,772,008	$837,673	$140,356	-	$3,636,820
Total Cost	**$4,458,887**	**$1,437,859**	**$242,214**	**$71,998**	**$4,703,069**
Revenue – Cost	**($181,996)**	**$796,403**	**$210,698**	**$194,860**	**($866,551)**

*Includes those portions of Weisenberg, Lowhill and Upper Milford Township that are direct customers of LCA as well as the WLI.

The May 24, 2011 letter from the USEPA to the WLSP requested a breakdown of costs expended for compliance with the AO. The accounting procedures of each partner in the WLSP do not have the ability to differentiate each SCARP-related activity. Table 6-1 is a roll-up of all SCARP-related costs. During the reporting period LCA expended $776,841 in AO compliance costs. Funding options for rehabilitation or capacity and storage projects will be reported in the forthcoming SCARP *Implementation Outline*.

6.2. Fee Structure

The sewer rates for Upper Milford, the Western Lehigh Interceptor, and the Little Lehigh Relief Interceptor have been updated and are reported below in Table 6-2, Table 6-3, and Table 6-4 respectively. All other sewer rates have remained constant.

6.2.1. Upper Milford

Table 6-2: Upper Milford Updated Sewer Rates

Capital Recovery Charges / ***System***	Tapping Fee $/1000 gals	Tapping Fee $/EDU
Upper Milford System		
Route 29 Service Area		
Contributed Area	$16,980.00	$3,857.83
LCA-Installed Area	$24,720.00	$5,674.00
Lower Macungie Twp. Customer	$2,560.00	$611.52
Other Service Areas		
Contributed Area	$11,660.00	$2,607.97
Non-Contributed Area	$19,400.00	$4,424.15

6.2.2. Western Lehigh Interceptor

Table 6-3: Western Lehigh Interceptor Updated Sewer Rates

Schedule of Wastwater Rates		
LCA Signatories		
	Flow	$1.13 per 1,000 gals
	Biochemical Oxygen Demand (BOD)	$0.26 per pound
	Total Suspended Solids (TSS)	$0.24 per pound
	Total Kjehldahl Nitrogen (TKN)	$0.40 per pound
	Allocation	$0.20 per 1,000 gals
Emmaus		
	Flow	$0.33 per 1,000 gals
Tapping Fee		
	Treatment Allocation	$6.11 per gal per day
	Western Lehigh Interceptor	$3.87 per gal per day

6.2.3. Little Lehigh Relief Interceptor

Table 6-4: Little Lehigh Relief Interceptor Updated Sewer Rates

Schedule of Wastewater Rates	
LCA Signatories	
Phase 1 Flow	$0.15 per 1,000 gals
Phase 2 Flow	$0.02 per 1,000 gals
Other Users	
Phase 1 Flow	$0.11 per 1,000 gals
Tapping Fee	
Little Lehigh Relief Interceptor	$1.10 per gal per day

APPENDIX A

Agendas – COA, LCA, and Signatories Monthly Meetings

LEHIGH COUNTY AUTHORITY

AO Program Manager's Meeting

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, AO Teams
Date:	8/24/17
Time:	8:30 – 11:30 A.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. Blending
    - City to initiate the State Appropriations Committee request?
    - LCA to coordinate a meeting with Senator and DEP to request an answer from DEP on blending?
    - Approval for blending design?

2. MOU Discussion
    - Is the City planning on continuing the MOU negotiations?
    - City position paper: will Signatories be told to get out of interceptor?
    - What might need to be addressed if MOU is not signed?
    - Is there a mutual benefit for an agreement between City and LCA?

3. Common Signatory Message to EPA
    - Getting out of the AO?
    - Getting EPA plan approval, released from EPA, DEP to implement?
    - Keep the AO?

4. Billing Meters
    - How to improve accuracy of meters?
        - Standards adopted for proper operation of meters
        - Set time period for corrections, re-meter, adjust flows
        - Lawsuits
        - Others?
    - Uniform flow adjustments to Signatory billing?

LEHIGH COUNTY AUTHORITY

AO Program Manager's Meeting

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, AO Teams
Date:	9/20/17
Time:	1:00 – 3:00 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. Senator Meeting Prep
   A. Who attends? Who facilitates?
   B. Objectives? Blending in state budget, specific blending answer, both?
   C. Appropriations procedure
   D. Penn Vest?
   E. One page Fact Sheet on blending?
   F. Agenda
      a. Introductions
      b. Purposes and Objective of Meeting
      c. Blending Presentation
      d. LCA Concerns
      e. Request
      f. Budget bill or Penn Vest
      g. Next Steps

2. MOU Discussion
   A. What might need to be addressed by an MOU?
      a. PPS FM Extension – Who owns it, who pays for construction?
      b. PPS Operation – Who pays for the wet weather operation when all Signatories benefit?
      c. 120 MG Peak Capacity – Who owns the peak capacity after each Signatory pays for a specific amount?
      d. Tioga/Trout Creek Interceptor Projects– These are specifically for the City, what is the cost allocation?
      e. City Interceptors – If no peak flow is allocated to the Signatories, will the City kick Signatories out? Will the City kick LCA out if we provide the PPS wet weather benefits?

LEHIGH COUNTY AUTHORITY

AO Program Manager's Meeting

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, AO Teams
Date:	9/29/17
Time:	9:00 – 11:30 A.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. Senator Meeting Review

2. MOU Discussion
   A. What might need to be addressed by an MOU?
      a. PPS FM Extension – Who owns it, who pays for construction?
      b. PPS Operation – Who pays for the wet weather operation when all Signatories benefit?
      c. 120 MG Peak Capacity – Who owns the peak capacity after each Signatory pays for a specific amount?
      d. Tioga/Trout Creek Interceptor Projects– These are specifically for the City, what is the cost allocation?
      e. City Interceptors – If no peak flow is allocated to the Signatories, will the City kick Signatories out? Will the City kick LCA out if we provide the PPS wet weather benefits?
      f. Draft MOU review

3. Signatory Flow Meter Plan

4. Update on Phase 1 design

LEHIGH COUNTY AUTHORITY

AO Program Manager's Meeting

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, AO Teams
Date:	10/31/17
Time:	9:00 – 11:30 A.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. Legislative Approach - blending
2. Acknowledgment Update
3. Signatory Flow Meters Approvals
4. Update on EPA Submissions
5. Update on Phase 1 Design

LEHIGH COUNTY AUTHORITY

City Signatory Meeting Information
Managers and Engineers

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, City Signatory Managers
Date:	8/8/17
Time:	9:30 – 11:45 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. EPA Update — Dan
    - Three items we requested
    - No response from EPA yet
    - City letter
2. KIWWTP Conceptual Design — Tim
    - Blending conclusion
    - Cost estimate/cost allocation
    - Schedule for design award
    - Schedule for construction
3. MOU — Dan
    - Status of signing the current MOU
    - Consequences to no MOU
        - No 3x commitment for Signatories
        - No common standard for Signatories to follow to be equitable
        - No commitment for Signatory to remain in the City interceptors
        - No commitment to Phase 2 peak flow basis
        - No assurance that EPA won't establish peak flows for all users
4. Flow Metering 2021 — Jim
    - Is there a need to monitor flows and models peak flows in 2021?
    - Is there a need for Signatories to understand their system now?

5. Billing Meter Improvements Pat/Jim/Dan

- What to do next?
- After original study, Signatories were told to fix meters in 2017 and then LCA would make flow adjustments in 2018 for non-working meters
- LCA/City to draft and implement a standard to be followed
- This will become the standard by which the City determines compliance with the current agreement that states the meters must be maintained as necessary in order to properly measure the volume of flow

6. Coordination/Submission of Individual AO CIP Plans

- What are the Signatories submitting to EPA?
- Separate or combined submission?

LEHIGH COUNTY AUTHORITY

City Signatory Meeting Information
Managers and Engineers

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, City Signatory Managers
Date:	8/8/17
Time:	9:30 – 11:45 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. EPA Update
2. KIWWTP Conceptual Design
3. MOU
4. Flow Metering 2021
5. Billing Meter Improvements
6. Coordination/Submission of Individual AO CIP Plans

LEHIGH COUNTY AUTHORITY

City Signatory Meeting Information
Managers and Engineers

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, City Signatory Managers
Date:	10/10/17
Time:	9:30 – 11:45 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. KIWWTP Conceptual Design Update
2. EPA AO Plan Acknowledgement
3. Billing Meter Program Development
4. 2018 Draft City Wastewater Rates

LEHIGH COUNTY AUTHORITY

City Signatory Meeting Information
Managers and Engineers

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, City Signatory Managers
Date:	11/14/17
Time:	9:30 – 11:45 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. EPA letter
2. EPA AO Plan Acknowledgement
3. Billing Meter Program Development

LEHIGH COUNTY AUTHORITY

City Signatory Meeting Information
Managers and Engineers

Meeting Facilitator:	Pat Mandes
Attendees:	LCA, City, City Signatory Managers
Date:	12/12/17
Time:	9:30 – 11:45 P.M.
Place:	LCA Main Office
Meeting Topic(s):	EPA Administrative Order Coordination

Meeting Agenda:

1. EPA Communication
2. Billing Meter Program Development

LEHIGH COUNTY AUTHORITY

Meeting Information

Meeting Facilitator: Pat Mandes
Attendees: WLI I & I Engineer's Workgroup
Date: 7/06/17
Time: 9:00 A.M.
Place: LCA Office
Meeting Topic(s): WLSP SCARP

Meeting Agenda:

1) City Plan
2) Revised MOC Review and Discussion
3) Scope of Work for Capital Improvements Plan
4) Re-baseline of Allocation for Debt Service Payments
5) CMOM
6) Lateral Work Paid by Municipality

LEHIGH COUNTY AUTHORITY

Meeting Information

Meeting Facilitator: Pat Mandes
Attendees: WLI I & I Engineer's Workgroup
Date: 8/01/17
Time: 9:00 A.M.
Place: LCA Office
Meeting Topic(s): WLSP SCARP

Meeting Agenda:

1) EPA Semi-annual report
2) Revised MOC Review and Discussion
3) Scope of Work for Capital Improvements Plan
    a. Needs from Partner Engineers and timelines
    b. Needs from Managers and timelines
4) Current Flow Metering Program
    a. Current status
    b. Project Completion?
5) Re-baseline of Allocation for Debt Service Payments
6) CMOM Template
    a. Template finish date
    b. Plan completion date