

EAST GOSHEN MUNICIPAL AUTHORITY

April 9, 2018

7:00 PM

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE
a. Ask if anyone will be taping the meeting

2. CHAIRMAN'S REPORT/OTHER MEMBERS REPORTS

3. SEWER REPORTS

- a. Director of Public Works Report.
b. Pennoni Engineer's Report.
c. Big Fish Environmental Report. – did not receive

4. APPROVAL OF MINUTES

- a. March 12, 2018

5. APPROVAL OF INVOICES

Pennoni Invoice #794736	\$	416.00
Pennoni Invoice #794738	\$	3,452.34
Pennoni Invoice #794739	\$	3,822.00
Pennoni Invoice #794740	\$	2,176.50
Pennoni Invoice #794741	\$	3,184.00
Gawthrop Invoice #192549	\$	400.00

6. LIAISON REPORTS

7. FINANCIAL REPORTS

- a. March Financial Report
b. Disclosure Requirements
c. Concise Statements

8. OLD BUSINESS

- a.

9. GOALS

- a. Continue to monitor the upgrades at West Goshen Sewer Plant.

- b. Continue to implement the I&I Plan – 3-8-2018 completed
- c. Submit articles for the newsletter.

10. NEW BUSINESS

- a. Sewer Line replacement price quote
- b. Semi-Annual Sewer System Status Report #17 Municipal Auth.

11. CAPACITY REQUESTS

12. ANY OTHER MATTER

13. CORRESPONDENCE AND REPORTS OF INTEREST

a.

14. PUBLIC COMMENT

15. ADJOURNMENT

EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

April 2, 2018

To: Municipal Authority
From: Mark Miller
Re: March 2018 Monthly Report

Monthly Flows:

The average daily flow to West Goshen was 786,000 gallons per day. No problems to report.

Meters:

The meters are being read on a daily basis with no problems to report.

C.C. Collection:

The pump stations were checked on a daily basis with no problems for the month. We continued with going house to house to do a visual inspection of the sewer laterals. We have replaced 100+ caps and vents.

I did a visual inspection of the manholes that were spray rocked, they are all in good condition.

R.C. Collection:

The pump station was visited on a daily basis. The wet well was power washed and vacuumed out. We also did lateral inspection in the following developments listed below Applebrook. Both community's Bow Tree, Clock Tower, Hunt Country, Realan, Saddlebrook, Highland, Taylor, Colonial, Cornwallis, Vista Farms, Wineberry, and Ridley Creek.

The plant operator reported that the MCC (motorized control center) blower 4-1B was tripping out, Lenni Electric was needed to figure out what was causing the problem.

Filter feed pump #2 was pulled for maintenance repairs and taken to Deckmens to be looked over. Two more Caustic Soda totes were dropped off on the 29th. General cleanup maintenance was done by the staff.

Alarms:

We responded to 23 alarms for March which were all various issues.

PA One Calls:

We received 35 PA One calls March.

**EAST GOSHEN MUNICIPAL AUTHORITY
ENGINEER'S REPORT**

April 5, 2018

Invoices

- Invoices with summaries are provided under separate cover.

Ridley Creek Sewage Treatment Plant (RCSTP)

- Caustic soda pilot study – The trial began on February 28 and is continuing with apparent favorable results to-date. The operator is performing sampling, and we are monitoring the results approximately weekly. The required caustic feed rate appears to be less than half of that which we expected: 15-18 gallons/day average actual vs. 40 gallons/day expected. For the first 23 days of the trial, the average alkalinity in SBR #3 had been approximately 17% higher than in the other two tanks. Thereafter, the caustic feed rate was reduced $\pm 8.5\%$ for 10 days, but there was very limited alkalinity reduction. The feed rate was then reduced another 8.5%. The following two days indicated a notable decrease in alkalinity that initially appeared to be similar to the levels in the other two tanks; however, additional time is needed to determine the operational impact at this feed rate.

Two additional caustic totes were delivered earlier this week to extend the trial, and the first went online on April 4. The first two caustic soda totes are now empty. We anticipate the two new totes will allow for the trial to be extended for another ± 6 weeks, until mid-May.

Reservoir Road Pump Station

- The final bid document and plan set has been provided electronically to the Township, and a hard copy will be provided at the April 9 Authority meeting.
- A listing of the permits, expiration dates, and renewal deadlines has also been provided.

RCSTP and Pump Stations' O&M Manual

- We recommend the Manual be revisited in July-August 2018 to determine if updates are needed and/or if new information has become available to incorporate.

Supplee Valley Pipe Lining

- SWERP completed lining of all contracted sewers on February 21. They performed post-construction TV videos of the lined sewers. We have reviewed the videos and have found the work acceptable. However, 7 laterals were observed to have active flow coming from up the lateral and there were 6 new infiltration sources at connection joints between laterals and the sewer main. The PW Department inspected 7 laterals via TV inspection and found one to have a new infiltration source and another house to have a leaky fixture inside. The other 5 laterals were dry. SWERP provided a quote of \$13,570 to install 6 cured-in-place lateral connection "saddle" repairs and one lateral cured-in-place spot repair that was approved at the March MA meeting.
- SWERP expects to return to the site next week (April 9-13) to perform the change order saddle and spot repairs work as well as the injection grouting of two manholes from the original project scope.
- We expect the first (and final) invoice will be submitted thereafter for consideration at the May MA meeting.

- There is a significant amount of infiltration that has been identified in this area of the sewer system during this project. Based on visual observations, we estimate that the project may be addressing nearly 100,000 gpd of infiltration sources. We will attempt to quantify the reduction via meter analysis following the completion of work. *No update since our last report.*

Barkway Pump Station Grinder

- We completed construction plans for the installation of the Muffin Monster and submitted them to the Township for review. The grinder is proposed inside the existing wet well, and the hydraulic power pack is proposed inside the generator/controls building. *No update since our last report.*

Ashbridge Pump Station Force Main

- Test pits will be performed to identify backfill conditions along Manley Road with one test pit on Edith Road, as recommended by the Municipal Authority, when weather permits. *No update since our last report.*

Tallmadge Drive Sewer Main Replacement

- We have prepared an existing conditions plan of the roadway and sanitary sewer based on our field survey, and we reviewed the Township's sewer videos. A portion of the sewer has a severe sag, and we have identified the approximate extent of repair required.
- The three options under consideration at this time are to: (1) replace only the most severe sag, which is believed to be approximately 40 LF of pipe; (2) replace the full length of pipe from manhole-to-manhole to provide a consistently sloped pipe for the entire run to eliminate two other sags; or (3) replace the full length of sewer run plus the next downstream sewer run and the intermediate manhole in order to improve the very flat slope of the subject pipe.
- We provided an opinion of probable construction cost to the Township for Option 3, consisting of replacement of 545 linear feet of pipe and one manhole.

I&I Support and Reporting

- We finalized and issued semi-annual I&I report #17. A summary of the report follows:
 - The meter data from 2017 still indicates very high flows in the Chester Creek interceptor between Paoli Pike and E. Strasburg Rd. We believe that we have found and addressed a significant amount of that continuous infiltration in the Supplee Valley pipe lining project, but we will need to analyze post-rehab meter data to determine how much was permanently removed from the system.
 - Additionally, since the portable meters have had ongoing issues with reliability, require very frequent maintenance, and because more timely data is now available from the permanent meters via the new cellular systems, we are not planning to do any portable metering in the next several months. We will focus on the permanent meters instead. Portable meters may be used to strategically isolate high flow conditions thereafter depending on the results of the next few months of permanent meter data analysis.

Chapter 94 Reports

- The reports for the Westtown and Ridley Creek Service Areas were completed and submitted to PADEP by the required March 31 deadline. The West Goshen (Chester Creek) Service Area report was submitted to West Goshen for inclusion in their Chapter 94 Report submission to PADEP.

New Connections

- We reviewed a plan for a new residential sewer connection at 1506 Meadowbrook Lane via grinder pump. Comments were provided as part of the Land Development Plan review.

West Goshen Sewer System Consultation

- No activity since last report.

DRAFT
EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY
MEETING MINUTES
March 12, 2018

The East Goshen Township Municipal Authority held their regular public meeting on Monday, March 12, 2018 at 7:00 pm at the East Goshen Township building. Members in attendance were: Chairman Jack Yahraes , Ed McAssey, and Phil Mayer. Also in attendance were: Mark Miller (Director of Public Works), Patrick McKenna (attorney), Mike Ellis (Pennoni) and Walter Wujcik (Conservancy Board).

COMMON ACRONYMS:

<i>BFES – Big Fish Environmental Services</i>	<i>MA- Municipal Authority</i>
<i>BOS – Board of Supervisors</i>	<i>NPDES – National Pollutant Discharge Elimination System</i>
<i>CB – Conservancy Board</i>	<i>PC – Planning Commission</i>
<i>DEP – Department of Environmental Protection</i>	<i>PM – Prevention Maintenance</i>
<i>EPA – Environmental protection Agency</i>	<i>PR – Park & Recreation Board</i>
<i>HC – Historical Commission</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
<i>I&I – Inflow & Infiltration</i>	<i>SBR – Sequencing Batch Reactor</i>
<i>LCSTP – Lockwood Chase Sewer Treatment Plant</i>	<i>SSO – Sanitary System Overflow</i>
	<i>WAS – Waste Activated Sludge</i>

Call to Order & Pledge of Allegiance

Jack called the meeting to order at 7:00 pm and led those present in the Pledge of Allegiance. There was a moment of silence to remember our troops and first responders. Jack asked if anyone would be recording the meeting. There was no response.

Chairman’s Report

Jack will attend the West Goshen meeting this Wednesday.

Sewer Reports

1. Director of Public Works, Mark Miller’s report for January:

Monthly Flows: The average daily flow to West Goshen was 789,000 gallons per day. No problems to report.

Meters: The meters are being read on a daily basis with no problems to report.

C.C. Collection: We have been busy inspecting the collection system and repairing the cleanouts and vent caps. We have repaired 47 to date. The pump stations were visited on a daily basis during the storm. All stations were operating on emergency power for three days. We televised the Supplee Valley development to check several questionable laterals. We located one that will need repair. In the last 10 days, they have worked on several hundred caps/vents.

R.C. Collection: We have been busy repairing sewer laterals. To date we have repaired over 140 laterals. We had to hand dig 7 cleanouts and installed glue joint tee’s and pipe on those 7. The snow has put a damper on the repairs. Once the snow melts we will go out and continue the inspections. The Hunt Country Pump Station wet well was cleaned and the floats were pulled and cleaned.

1 R.C. Plant: The flow meter is still out of service and is scheduled to be re-installed on March
2 13th. Both generators were running for three days until PECO came out and re-set the fuse.

3 We had to refuel the generators each day.

4 Alarms: We responded to 33 alarms for February which were all weather related.

5 PA One Calls: We received 52 PA One calls for February.

6
7 Mark mentioned that Scott Fowler will be at next month's meeting. He spoke about the areas
8 that had power outages during the recent storms.

10 **2. Pennoni Engineer's Report for October**

11 Mike Ellis provided the following report.

12 **Invoices**

- 13 • Invoices with summaries are provided under separate cover.

14 **Ridley Creek Sewage Treatment Plant (RCSTP)**

- 15 • Caustic soda pilot study – The trial began on February 28. The operator is performing
16 sampling and we are monitoring the results on an approximate daily basis. SBR#3 is the trial
17 tank and SBR#2 is being sampled as a control tank. According to Big Fish, the trial is
18 working well through one week. The caustic feed has been approximately half of that which
19 we expected – 24 gallons/day average actual vs. 40 gallons/day expected. Despite the lesser
20 dosage, the pH and alkalinity in SBR#3 have been higher than in the other two tanks so we
21 may reduce the caustic dosage rate next week. Based on the current chemical feed rate, the
22 trial will last approximately 4 weeks (end of March) with the two caustic totes currently at the
23 plant. There have been a couple of storm events that are resulting in unusual influent
24 conditions during the past week so we anticipate needing the entire 4 week duration for the
25 study. We will determine later in March if enough sampling data has been obtained to make
26 conclusions or if the trial needs to be extended. If it needs to be extended, an additional
27 caustic tote could be acquired to provide an additional 2 weeks.

28 **Reservoir Road Pump Station**

- 29 • We have received all permits. The bid document will be finalized to incorporate the recently
30 issued Army Corps of Engineers permit, and a final set of plans and specifications will be
31 provided to the Township for their files. *No update since our last report.*
- 32 • A listing of the permits, expiration dates, and renewal deadlines will also be provided. *No*
33 *update since our last report.*

34 **RCSTP and Pump Stations' O&M Manual**

- 35 • We recommend the Manual be revisited in July-August 2018 to determine if updates are
36 needed and/or if new information has become available to incorporate.

1 **Supplee Valley Pipe Lining**

- 2 • SWERP completed lining of all contracted sewers on February 21. They performed post-
3 construction TV videos of the lined sewers. We have reviewed the videos and have found the
4 work acceptable. However, 7 laterals were observed to have active flow coming from up the
5 lateral and there were 6 new infiltration sources at connection joints between laterals and the
6 sewer main. The PW Department inspected 7 laterals via TV inspection and found one to
7 have a new infiltration source and another house to have a leaky fixture inside. The other 5
8 laterals were dry. SWERP provided a quote of \$13,570 to install 6 cured-in-place lateral
9 connection “saddle” repairs and one lateral cured-in-place spot repair.
- 10 • SWERP previously performed two spot repair liners on one sewer lateral and one spot repair
11 liner on a sewer main to address significant infiltration that was identified during their pre-
12 construction cleaning and television. This work was beyond the contract scope but was
13 necessary in order to line the sewer mains. Their change order quote for this work was
14 \$5,427.
- 15 • SWERP still needs to perform injection grouting of two manhole leaks, but they have not
16 provided a schedule for that work.
- 17 • There is a significant amount of infiltration that has been identified in this area of the sewer
18 system during this project. Based on visual observations, we estimate that the project may be
19 addressing nearly 100,000 gpd of infiltration sources. We will attempt to quantify the
20 reduction via meter analysis following the completion of work.

21 **Barkway Pump Station Grinder**

- 22 • We completed construction plans for the installation of the Muffin Monster and submitted
23 them to the Township for review. The grinder is proposed inside the existing wet well and the
24 hydraulic power pack is proposed inside the generator/controls building.
- 25 • Note: Mark mentioned that he applied for a grant so they have to wait to see if they get it.

26 **Ashbridge Pump Station Force Main**

- 27 • Test pits will be performed to identify backfill conditions along Manley Road with one test pit
28 on Edith Road, as recommended by the Municipal Authority, when weather permits. We
29 coordinated with Mark Miller on the scope of these test pits. *No update since our last report.*

30 **Tallmadge Drive Sewer Main Replacement**

- 31 • We prepared an existing conditions plan of the roadway and sanitary sewer based on our field
32 survey, and we reviewed the Township’s sewer videos. A portion of the sewer has a severe
33 sag, and we have identified the approximate extent of repair required; however, additional
34 televising is recommended to determine with certainty. We have communicated with the
35 Township about our findings and repair alternatives and we intend to meet to discuss further.

- 1 • The two options under consideration at this time are to: (1) replace only the most severe sag
2 which is believed to be approximately 40 LF of pipe; or (2) replace the full length of pipe
3 from manhole to manhole to provide a consistently sloped pipe for the entire run to eliminate
4 two other sags. A third, more costly option that is not considered necessary at this time is to
5 replace the full length of sewer run plus the next downstream sewer run and the intermediate
6 manhole in order to improve the very flat slope of the subject pipe.
7 Note: Mark commented that they televised it and may get a contractor to do this project.
8

9 **I&I Support and Reporting**

- 10 • We issued a draft semi-annual I&I report to the Township and conducted a review meeting
11 with Mark Miller thereafter. The report is being finalized based upon the meeting and we
12 expect to issue it on March 12.

13 **Chapter 94 Reports**

- 14 • We prepared the report for the Westtown Service Area and submitted it to the Township for
15 review. The reports for the Ridley Creek and West Goshen Service Areas are nearly complete
16 and we expect to submit both reports to the Township for review by March 16.

17 **New Connections**

- 18 • We received a grinder pump shop drawing submission for the Applebrook Golf Course
19 Learning Center that is scheduled for review.

20 **West Goshen Sewer System Consultation**

- 21 • No activity since last report.
22

23 **3. Big Fish Environmental Services** – Scott’s report showed that the Ridley Creek sewage
24 treatment plant outfall 001 achieved compliance with the permitted effluent discharge limitations
25 during the month of January 2018. Discharge to the Applebrook storm water lagoon continued
26 during the month. Chemical usage utilized for total phosphorus removal, pH and total alkalinity
27 remained consistent with previous months. No significant mechanical or operational issues were
28 observed during operation of sludge dewatering equipment or SBR treatment process.
29

30 **Approval of Minutes**

31 The minutes of the February 12, 2018 meeting were approved as corrected.
32

33 **Approval of Invoices**

34 1. Ed moved to approve payment of the following Pennoni invoices:

- | | | | |
|----|----|-----------------|-------------|
| 35 | a. | Pennoni #789506 | \$ 115.83 |
| 36 | b. | Pennoni #786507 | \$ 7,304.50 |
| 37 | c. | Pennoni #786508 | \$ 2,043.75 |
| 38 | d. | Pennoni #786509 | \$ 1,112.00 |
| 39 | e. | Pennoni #786510 | \$ 1,173. |

40 Phil seconded the motion. The motion passed unanimously.
41

1 2. Ed moved to approve payment of the Gawthrop Invoice #191166 for \$240.00. Jack seconded the
2 motion. The motion passed unanimously.
3

4 **Liaison Reports**

5 **Conservancy Board** - Walter reminded everyone that Keep East Goshen Beautiful Day will be held
6 on Saturday April 21, at 8:00 am. The Ponds report has been received and will be reviewed. They
7 will do a walk to determine where the Spring planting will be done. John Scheidt has resigned.
8

9 **Financial Reports**

10 Jon Altshul provided the following written report:
11 **In February**, the Municipal Authority recorded \$916 in income (one connection fee, pine rock
12 revenue and interest) and \$10,014 in expenses (primarily \$3,664 for West Goshen Capital and \$5,968
13 general engineering expenses), for a negative variance of \$9,098.
14 As of February 28th, the fund balance was \$90,694, of which \$68,543 is in the main construction
15 account (most of which represents the 2013 note) and the remaining \$22,151 in the operating account
16 with M&T.
17

18 Updated Continuing Disclosure Requirements – In order to comply with the Internal Revenue Code
19 and the continuing disclosure requirements of the SEC and Municipal Securities Rulemaking Board,
20 DelVal has asked that both the Township and Municipal Authority execute new Continuing
21 Disclosure Agreement (CDA). Ed made a motion to authorize the Chairman to execute the updated
22 Continuing Disclosure Agreements for our outstanding loans with the Delaware Valley Regional
23 Finance Authority. Phil seconded the motion. The motion passed unanimously.
24

25 **New Business**

26 The Authority members reviewed the SWERP request for funds for additional work that had to be
27 done so they could do the lining work. Phil made a motion to approve the total of \$18,997 for
28 SWERP. Ed seconded the motion. The motion passed unanimously.
29 Phil also made a motion to approve \$3,000 for Pennoni's efforts to oversee the SWERP project. Ed
30 seconded the motion. The motion passed unanimously.
31

32 **Adjournment**

33 Ed thanked everyone. He had a good time, learned a lot and will miss everyone. There being no
34 further business, Ed moved to adjourn the meeting. Phil seconded the motion. The meeting was
35 adjourned at 8:00 p.m. The next regular meeting will be held on Monday, April 9, 2018 at 7:00 pm.
36

37 Respectfully submitted,
38
39
40

41 Ruth Kiefer
42 Recording Secretary



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 794736
Invoice Date : 03/29/2018
Project : EGMA1504
Project Name : Reservoir Rd PS Design & Permitting

For Services Rendered through: 3/18/2018

Finalized bid document.

Phase : 11 -- Final Design

Finalized bid document.

Total Phase : 11 -- Final Design

Labor : 416.00
Expense : 0.00
Phase Total : 416.00

Amount Due This Invoice

416.00

Phase : 11 -- Final Design

Labor

Class

Hours/ Units	Rate
0.25	117.00
4.25	91.00
<u>4.50</u>	

Amount

29.25

386.75

416.00

Senior Professional

Associate Professional

Labor Total:

Total Phase : 11 -- Final Design

Labor : 416.00
Expense : 0.00

Total Project : EGMA1504 -- Reservoir Rd PS Design & Permitting

Labor : 416.00
Expense : 0.00

OK,
for [signature]
4/6/18

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
 EGMA1504 Invoice Summary
 Invoice Date 3/29/2018

Project:	EGMA1504		
Pennoni Job No.:	Reservoir Rd PS Design & Permitting		
Invoice No:	794736		
Invoice Period:	1/15/2018	to	3/18/2018
		Date:	3/29/2018
Initial Authorization:	\$	167,120.00	
Contract Amount:	\$	193,200.00	
Previously Invoiced:	\$	192,645.75	
Current Invoice:	\$	416.00	
Invoiced to Date (\$):	\$	193,061.75	
Invoiced to Date (%):		99.93%	
Remaining Budget (\$):	\$	138.25	
Remaining Budget (%):		0.07%	

Budget by Phase:

Phase Name:	Final Design	Phase 11
Phase Budget:	\$ 65,170.25	
Previously Invoiced:	\$ 64,993.50	
Current Invoice:	\$ 416.00	
Invoiced to Date (\$):	\$ 65,409.50	
Invoiced to Date (%):	100.37%	
Remaining Budget (\$):	\$ (239.25)	
Remaining Budget (%):	-0.37%	

Comments: Finalized bid document.

Reservoir Road Pump Station Design & Permitting

INVOICE SUMMARY
For Services Rendered through: 3/18/2018

Task No.	Activity	Contract Amount*	invoiced Effort thru 9/17/2017	Remaining Budget (\$)	Remaining Budget (%)	Completed?
1	Concept Design	\$13,655.75	\$13,655.75	-	-	Yes
2	DEP WQM Pre-App. Meeting	\$1,300.00	\$1,300.00	-	-	Yes
3	Existing Conditions Survey	\$22,783.75	\$22,783.75	-	-	Yes
4	Sewer Stakeout in Easements	\$0.00	\$0.00	-	-	Scope eliminated
5	1636 Bow Tree Dr. Boundary Survey & Easement	\$4,020.00	\$4,020.00	-	-	Yes
6	Additional Boundary Surveys & Easements	\$0.00	\$0.00	-	-	Scope eliminated
7	Geotechnical Borings	\$4,000.00	\$4,000.00	-	-	Yes
8	Install Permanent Survey Benchmarks	\$0.00	\$0.00	-	-	Scope eliminated
9	Progress Design	\$29,450.00	\$29,450.00	-	-	Yes
10	Infiltration Testing	\$1,800.00	\$1,800.00	-	-	Yes
11	Final Design	\$65,463.50	\$65,409.50	\$54.00	<0.01%	No**
12	Permitting	\$50,647.00	\$50,647.00	-	-	Yes
TOTAL		\$193,120.00	\$193,066.00	\$54.00	<0.01%	

*After 12/14/2015 approved re-allocation of task budgets, 5/9/2016 approval of \$7,000 supplement, 7/11/16 approval of \$4,000 supplement, 11/14/16 approval of \$5,000 supplement, 4/10/17 approval of \$4,000 supplement, and 6/12/17 approval of \$6,000 supplement.

**Need to assemble full bid document package for Township.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 794738
Invoice Date : 03/29/2018
Project : EGMAU17006
Project Name : Barkway PS Muffin Monster

For Services Rendered through: 3/18/2018

Completed near-final DRAFT plans and submitted them to the Township for review.

Phase Code / Name	Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
**** -- Professional Services	\$9,000.00	\$4,148.97	84.46%	\$7,601.31	\$3,452.34
Total :	<u>\$9,000.00</u>	<u>\$4,148.97</u>		<u>\$7,601.31</u>	<u>\$3,452.34</u>

Amount Due This Invoice

\$3,452.34

Joe *OK*
4/6/18

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
 EGMAU17006 Invoice Summary
 Invoice Date 3/29/2018

Project:	EGMAU17006		
Pennoni Job No.:	Barkway PS Muffin Monster		
Invoice No:	794738		
Invoice Period:	2/12/2018	to	3/18/2018
		Date:	3/29/2018
Initial Authorization:	\$	9,000.00	
Contract Amount:	\$	9,000.00	
Previously Invoiced:	\$	4,148.97	
Current Invoice:	\$	3,452.34	
Invoiced to Date (\$):	\$	7,601.31	
Invoiced to Date (%):		84%	
Remaining Budget (\$):	\$	1,398.69	
Remaining Budget (%):		16%	

Budget by Phase:

Phase Name:	Barkway PS Muffin Monster		
Phase Budget:	\$	9,000.00	
Previously Invoiced:	\$	4,148.97	
Current Invoice:	\$	3,452.34	
Invoiced to Date (\$):	\$	7,601.31	
Invoiced to Date (%):		84%	
Remaining Budget (\$):	\$	1,398.69	
Remaining Budget (%):		16%	

Comments: Completed near-final DRAFT plans and submitted them to the Township for review.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice #: 794739
Invoice Date: 03/29/2018
Project: EGMAU17007
Project Name: Supplee Valley CIPPL Construction

For Services Rendered through: 3/18/2018

Construction phase office support consisting of review of post-construction TV videos, summary email of observed lateral flows and new infiltration sources, coordination with M. Miller to further investigate lateral flows, coordination of scope and change order cost of additional infiltration repairs with M. Miller and SWERP, and feasibility evaluation of installing a sewer trench relief pipe to convey groundwater away from the sewer system (determined not to be feasible).

Part-time construction observation of cured-in-place pipe lining from February 12 through February 21, when the final manhole-to-manhole pipe liner was installed.

Phase : **** -- Professional Services
Total Phase : **** -- Professional Services

Labor : 3,822.00
Expense : 0.00
Phase Total : 3,822.00

\$3,822.00

Amount Due This Invoice

Fee : 15,000.00
Prior Billings : 8,486.25
Current Billings : 3,822.00
Total Billings : 12,308.25

Phase : **** -- Professional Services

Labor Class	Hours/Units	Rate	Amount
Authority Engineer	4.25	123.00	522.75
Associate Professional	14.25	91.00	1,296.75
Sr. Engineering Technician	22.50	89.00	2,002.50
Labor Total:	41.00		3,822.00

4/6/18
OK
[Signature]

Total Phase : **** -- Professional Services

Labor : \$3,822.00
Expense : \$0.00

Total Project : EGMAU17007 -- Supplee Valley CIPPL Construction

Labor : \$3,822.00
Expense : \$0.00

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
 EGMAU17007 Invoice Summary
 Invoice Date 3/29/2018

Project: EGMAU17007
Pennoni Job No.: Suplee Valley CIPPL Construction
Invoice No.:
Invoice Period: 2/12/2018 to 3/18/2018
Date: 3/29/2018

Initial Authorization:	\$	12,000.00
Contract Amount:	\$	15,000.00
Previously Invoiced:	\$	8,486.25
Current Invoice:	\$	3,822.00
Invoiced to Date (\$):	\$	12,308.25
Invoiced to Date (%):		82%
Remaining Budget (\$):	\$	2,691.75
Remaining Budget (%):		18%

Budget by Phase:

Phase Name:	Suplee Valley CIPP
Phase Budget:	\$ 15,000.00
Previously Invoiced:	\$ 8,486.25
Current Invoice:	\$ 3,822.00
Invoiced to Date (\$):	\$ 12,308.25
Invoiced to Date (%):	82%
Remaining Budget (\$):	\$ 2,691.75
Remaining Budget (%):	18%

**Construction
 phase office
 support**

Comments: Construction phase office support consisting of review of post-construction TV videos, summary email of observed lateral flows and new infiltration sources, coordination with M. Miller to further investigate lateral flows, coordination of scope and change order cost of additional infiltration repairs with M. Miller and SWERP, and feasibility evaluation of installing a sewer trench relief pipe to convey groundwater away from the sewer system (determined not to be feasible).

Part-time construction observation of cured-in-place pipe lining from February 12 through February 21, when the final manhole-to-manhole pipe liner was installed



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 794740
Invoice Date : 03/29/2018
Project : EGMAU18001
Project Name : 2018 General Services

For Services Rendered through: 3/18/2018

Reviewed Big Fish's February RCSTP operations report, prepared for and attended February and March MA meetings, and prepared March Engineers Report. Continued coordination of RCSTP caustic soda trial including review of operator's proposed trial sampling plan, guidance to the operator on starting trial on February 28, review of first week of sampling results, and site visit to confirm system functionality. Prepared for and attended review meeting with M. Miller about Tallmadge Drive sanitary sewer slope deficiencies and rehabilitation alternatives and recommendations; reviewed new videos of the sewer and analyzed conditions; and prepared cost estimates for sewer repairs following the review meeting.

Phase : **** -- Professional Services
Total Phase : **** -- Professional Services

Labor : 2,176.50
Expense : 0.00
Phase Total : 2,176.50

\$2,176.50

Amount Due This Invoice

Fee : 18,000.00
Prior Billings : 2,166.75
Current Billings : 2,176.50
Total Billings : 4,343.25

Phase : **** -- Professional Services

Labor Class	Hours/Units	Rate	Amount
Authority Engineer	9.00	123.00	1,107.00
Senior Professional	1.00	117.00	117.00
Associate Professional	9.00	91.00	819.00
Sr. Engineering Technician	1.50	89.00	133.50
Labor Total:	20.50		2,176.50

[Handwritten signature]
OK
4/6/18

Total Phase : **** -- Professional Services

Labor : \$2,176.50
Expense : \$0.00

Total Project : EGMAU18001 -- 2018 General Services

Labor : \$2,176.50
Expense : \$0.00

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
 EGMAU18001 Invoice Summary
 Invoice Date 3-29-2018

Project:	EGMAU18001		
Pennoni Job No.:	2018 General Services		
Invoice No:	794740		
Invoice Period:	2/12/2018	to	3/18/2018
		Date:	3/29/2018
Initial Authorization:	\$ 18,000.00		
Contract Amount:	\$ 18,000.00		
Previously Invoiced:	\$ 2,166.75		
Current Invoice:	\$ 2,176.50		
Invoiced to Date (\$):	\$ 4,343.25		
Invoiced to Date (%):			24%
Remaining Budget (\$):	\$ 13,656.75		
Remaining Budget (%):			76%

Budget by Phase:

Phase Name:	2018 General Services		
Phase Budget:	\$ 18,000.00		
Previously Invoiced:	\$ 2,166.75		
Current Invoice:	\$ 2,176.50		
Invoiced to Date (\$):	\$ 4,343.25		
Invoiced to Date (%):			24%
Remaining Budget (\$):	\$ 13,656.75		
Remaining Budget (%):			76%

Comments: Reviewed Big Fish's February RCSTP operations report, prepared for and attended February and March MA meetings, and prepared March Engineers Report. Continued coordination of RCSTP caustic soda trial including review of operator's proposed trial sampling plan, guidance to the operator on starting trial on February 28, review of first week of sampling results, and site visit to confirm system functionality. Prepared for and attended review meeting with M. Miller about Tallmadge Drive sanitary sewer slope deficiencies and rehabilitation alternatives and recommendations; reviewed new videos of the sewer and analyzed conditions; and prepared cost estimates for sewer repairs following the review meeting.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 794741
Invoice Date : 03/29/2018
Project : EGMAU18003
Project Name : 2017 Chapter 94 Reports

For Services Rendered through: 3/18/2018

Continued data gathering, analysis, and preparation of Chapter 94 Reports for West Goshen (Chester Creek) and Ridley Creek Service Areas and submitted draft West Goshen tributary report to the Township staff for review.

Phase : **** -- Professional Services
Total Phase : **** -- Professional Services

Labor : 3,184.00
Expense : 0.00
Phase Total : 3,184.00

Amount Due This Invoice

3,184.00

Fee : 11,000.00
Prior Billings : 2,514.75
Current Billings : 3,184.00
Total Billings : 5,698.75

Phase : **** -- Professional Services

Labor Class	Hours/Units	Rate	Amount
Authority Engineer	2.00	123.00	246.00
Senior Professional	15.00	117.00	1,755.00
Associate Professional	13.00	91.00	1,183.00
Labor Total:	30.00		3,184.00

OK
4/6/18

Total Phase : **** -- Professional Services

Labor : \$3,184.00
Expense : \$0.00

Total Project : EGMAU18003 -- 2017 Chapter 94 Reports

Labor : \$3,184.00
Expense : \$0.00

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

East Goshen Municipal Authority
EGMAU18003 Invoice Summary
Invoice Date 3/29/2018

Project: EGMAU18003
Pennoni Job No.: 2017 Chapter 94 Reports
Invoice No: 794741
Invoice Period: 2/12/2018 to 3/18/2018
Date: 3/29/2018
Initial Authorization: \$ 11,000.00
Contract Amount: \$ 11,000.00
Previously Invoiced: \$ 2,514.75
Current Invoice: \$ 3,184.00
Invoiced to Date (\$): \$ 5,698.75
Invoiced to Date (%): 52%
Remaining Budget (\$): \$ 5,301.25
Remaining Budget (%): 48%

Budget by Phase:

Phase Name: 2017 Chapter 94 Reports
Phase Budget: \$ 11,000.00
Previously Invoiced: \$ 2,514.75
Current Invoice: \$ 3,184.00
Invoiced to Date (\$): \$ 5,698.75
Invoiced to Date (%): 52%
Remaining Budget (\$): \$ 5,301.25
Remaining Budget (%): 48%

Comments: Continued data gathering, analysis, and preparation of Chapter 94 Reports for West Goshen (Chester Creek) and Ridley Creek Service Areas and submitted draft West Goshen tributary report to the Township staff for review.



Gawthrop Greenwood, PC
Attorneys at Law

17 East Gay Street, Suite 100 (p) 610-696-8225
West Chester, PA 19381-0562 (f) 610-344-0922
gglaw@gawthrop.com www.gawthrop.com

East Goshen Municipal Authority
1580 Paoli Pike
West Chester PA 19380

Page: 1
03/08/2018
Client No: 6604-001R
Invoice No. 192549

General Authority Services

Fees

		<u>Hours</u>		
02/12/2018	PMM			
	Review and analyze meeting packet in preparation for Authority meeting; Attend Authority meeting.	2.00		
	For Current Services Rendered	2.00		400.00
<u>Recapitulation</u>				
<u>Timekeeper</u>		<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Patrick M. McKenna		2.00	\$200.00	\$400.00
	Previous Balance			\$240.00
	Total Current Charges			400.00
03/08/2018	Payment			-240.00
	Balance Due			<u>\$400.00</u>

OK TRS 3/16/18

To ensure proper credit, please write client number on your check when returning payment. Thank You.
A finance charge of 1.25% per month (15% annually) may be charged on balances not paid 60 days after the invoice date.

Memo

To: Municipal Authority
From: Jon Altshul
Re: MA March Financial Report
Date: April 3, 2018

In March, the Municipal Authority recorded \$30,490 in income (including a \$30,000 transfer from the sewer fund, one connection fee, Pine Rock revenue, interest) and \$23,609 in expenses (including \$8,160 for the Q1 administrative overhead invoice, \$6,964 for audit services, \$11,749 for engineering, and \$400 for legal services), for a positive variance of \$6,881. Note that we were notified by West Goshen that we overpaid a capital invoice last month by \$3,664; as a result, the West Goshen Capital Expense line item shows a credit in March.

As of March 31st, the fund balance was \$97,575, of which \$72,288 is in the main construction account (most of which represents the 2013 note) and the remaining \$25,286 is in the operating account with M&T.

EAST GOSHEN TOWNSHIP
Other Funds
March 2018
Municipal Authority

Account Title	Acct #	Annual Budget	Y-T-D Budget	Y-T-D Actual	Y-T-D Variance	M-T-D Budget	M-T-D Actual	M-T-D Variance
REVENUE								
INTEREST EARNINGS	07341 1000	10	3	(13.48)	(16.48)	1	(14.53)	(15.53)
CAPITAL RESERVE-INTEREST	07341 1010							
INTEREST EARNED - CONSTRUCTION	07341 1020	50	50	542.61	492.61	10	81.66	71.66
DGED GRANT	07354 0400							
C.C. TAPPING FEES	07364 1100	8,000						
R.C. TAPPING FEES	07364 1110	2,000						
M.C. LOAN PAYMENTS	07364 1120							
CONNECTION FEES - SEWER	07364 1130	1,692		1,127.52	1,127.52		281.88	281.88
MISCELLANEOUS REVENUE	07380 1000			564.48	564.48		141.12	141.12
TRANSFER FROM GENERAL ACCT	07392 0100							
TRANSFER FROM SEWER OPERATING	07392 0500	75,853	18,963	30,000.00	11,037.00	6,321	30,000.00	23,679.00
TRANSFER-ANNUAL CAP. RESERVE	07392 0510							
GRANT REVENUE	07392 0800							
LOAN PROCEEDS - SEWER PROJECT	07392 0804							
TRANSFER FROM SEWER CAP RESERVE	07392 0900							
TRANSFER FROM RCSTP BUDGET	07392 0990							
LOAN PROCEEDS-SEWER PROJECT	07393 1001							
TOTAL REVENUE		87,605	19,016	32,221.13	13,205.13	6,332	30,490.13	24,158.13
EXPENSES								
ADMINISTRATIVE WAGES	07424 1400	32,411	8,102	8,160.33	(58.33)	8,102	8,160.33	(58.33)
R.C. LOAN ISSUANCE COSTS	07424 1500							
MISCELLANEOUS EXPENSE	07424 3000	2,500	625	100.00	525.00	209		209.00
MUNIC. AUTH. -AUDITING	07424 3110	9,384	4,692	6,964.00	(2,272.00)	4,692	6,964.00	(2,272.00)
ENGINEERING SERVICES	07424 3130	43,260	10,815	30,240.14	(19,425.14)	3,605	11,749.08	(8,144.08)
LEGAL SERVICES	07424 3140			1,320.00	(1,320.00)		400.00	(400.00)
W.G. C.C. STP-UPGRADE	07424 7400							
MANHOLE COVER REPLACEMENTS	07424 7405							
C.C. CAPITAL - METERS	07424 7410							
C.C. CAPITAL- COLLECTION	07424 7420							
C.C. CAPITAL- INTERCEPTOR	07424 7430							
CAPITAL PROJ.-ENGINEERING	07424 7431							
R.C. CAPITAL-STP	07424 7440							
R.C. CAPITAL - COLLECTION	07424 7450							
R.C.-CAP. PROJ.-ENGINEER	07424 7451							
R.C. CAP EXPANSION GEN'L CONTRACTOR	07424 7452							
R.C. CAP EXPANSION - ELECTRICAL	07424 7453							
R.C. CAP EXP CONTINGENCY CAPITAL	07424 7454							
R.C. CAP EXP CONTINGENCY ONGOING	07424 7455							

EAST GOSHEN TOWNSHIP
Other Funds
March 2018
Municipal Authority

Account Title	Acct #	Annual Budget	Y-T-D Budget	Y-T-D Actual	Y-T-D Variance	M-T-D Budget	M-T-D Actual	M-T-D Variance
R.C. CAP EXP ADDITIONAL CONTINGENCY	07424 7456							
LOCHWOOD - CAPITAL -STP	07424 7460							
LOCHWOOD-CAPITAL-COLLECT.	07424 7470							
LOCHWOOD ABANDONMENT ENGINEER	07424 7475							
LOCHWOOD ABANDONMENT CONSTRUCTION	07424 7476							
LOCHWOOD ELIMINATION PHASE 2	07424 7477							
CAP.REPLACEMENT R.C.	07424 7490							
CAPITAL REPLACEMENT ASHBRIDGE	07424 7491							
MARYDELL PUMP STATION - ENGINEER	07425 1000							
MARYDELL PUMP STATION -CONSTRUCTION	07425 2000							
HERSHEY MILL STATION - ENGINEER	07426 1000							
HERSHEY MILL STATION - CONSTRUCTION	07426 2000							
RESERVE PUMP STATION - ENGINEER	07427 1000							
RESERVE PUMP STATION - CONSTRUCTION	07427 2000							
RESERVOIR PUMP STATION - ENGINEER	07428 1000			142.50	(142.50)			
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000							
ASBESTOS CONCRETE ENGINEERING	07429 3130							
DIVERSION PROJ. - LEGAL	07429 3166						(3,664.01)	3,664.01
WEST GOSHEN CAPITAL	07429 6100	59,736		30,050.70	(30,050.70)			
M.C.-DVRFA-DEBT SERVICE	07471 1000							
M.A.-R.C. DEBT SERVICE	07471 1010							
DVREA PUMPING STATIONS - PRINCIPAL	07471 2000							
M.C.-DVRFA-INTEREST PAYMN	07472 1000							
M.A.-R.C. INTEREST	07472 1010							
DVREA PUMPING STATIONS - INTEREST	07472 2000							
TRANSFER TO GENERAL FUND	07492 0100							
TRANSFER TO SEW.OPERATING	07492 0500							
TRF TO SEWER SINKING FUND	07492 0550							
TRANSFER TO AUTHORITY CAP FUND	07492 0990							
TOTAL EXPENSES		147,291	24,234	76,977.67	(52,743.67)	16,608	23,609.40	(7,001.40)
NET RESULT FROM OPERATIONS		(59,686)	(5,218)	(44,756.54)	(39,538.54)	(10,276)	6,880.73	17,156.73

2018 MUNICIPAL AUTHORITY GENERAL LEDGER, AS OF 3/31/18

Beginning Fund Balance Total 142,331
 Beginning Construction Acct 101,939
 Beginning Operating Acct 40,393

Account #	Description	Per	Src	Debits	Credits	Date	Name	Description
07341-1000	BEGINNING BALANCE	1801	JE	-	0.31	2/2/2018	INTEREST EARNED JANUARY 2018	07 FUND
07341-1000	INTEREST EARNINGS	1802	JE	-	0.20	2/14/2018	INTEREST ADJ. FROM JAN.2018	7105.2
07341-1000	INTEREST EARNINGS	1802	JE	-	0.54	3/5/2018	INTEREST EARNED FEBRUARY 2018	07 FUND
07341-1000	INTEREST EARNINGS	1803	EX	15.00	-	3/6/2018	REIMBURSE S/R FOR BANK FEES	INTEREST EARNINGS
07341-1000	INTEREST EARNINGS	1803	JE	-	0.47	4/2/2018	INTEREST EARNED MARCH 2018	07 FUND
07341-1000	INTEREST EARNINGS	1803	JE	-	391.64	2/2/2018	INTEREST EARNED JANUARY 2018	07 FUND
07341-1020	BEGINNING BALANCE	1801	JE	-	69.31	3/5/2018	INTEREST EARNED FEBRUARY 2018	07 FUND
07341-1020	INTEREST EARNED - CONSTRUCTION	1802	JE	-	81.66	4/2/2018	INTEREST EARNED MARCH 2018	07 FUND
07341-1020	INTEREST EARNED - CONSTRUCTION	1803	JE	-	423.00	1/25/2018	STOFFLET, MICHAEL	
07364-1130	BEGINNING BALANCE	1801	CR	-	423.00	2/13/2018	JACOBS, ROBERT & CHERYL	
07364-1130	CONNECTION FEES - SEWER	1802	CR	-	423.00	2/27/2018	GEORGE SMITH & CHRISTINA CONLE	JACOBS & STOFFLET INTEREST
07364-1130	CONNECTION FEES - SEWER	1802	CR	-	282.24	2/13/2018	ANNUAL PINE ROCK INSTALLMENT	
07364-1130	CONNECTION FEES - SEWER	1802	JE	141.12	-	2/27/2018	ANNUAL PINE ROCK INSTALLMENT	
07364-1130	CONNECTION FEES - SEWER	1802	JE	-	423.00	3/23/2018	PAPPANO, JOSEPH & PATRICIA	RC214 PAPPANO
07364-1130	CONNECTION FEES - SEWER	1803	CR	-	-	3/23/2018	ANNUAL PINE ROCK INSTALLMENT	
07364-1130	CONNECTION FEES - SEWER	1803	JE	141.12	-	-	-	
07380-1000	BEGINNING BALANCE	1802	JE	-	282.24	2/13/2018	ANNUAL PINE ROCK INSTALLMENT	JACOBS & STOFFLET INTEREST
07380-1000	MISCELLANEOUS REVENUE	1802	JE	-	141.12	2/27/2018	ANNUAL PINE ROCK INSTALLMENT	
07380-1000	MISCELLANEOUS REVENUE	1803	JE	-	141.12	3/23/2018	ANNUAL PINE ROCK INSTALLMENT	RC214 PAPPANO
07380-1000	MISCELLANEOUS REVENUE	1803	JE	-	-	-	-	TO COVER EXPENSES
07392-0500	BEGINNING BALANCE	1803	JE	-	30,000.00	3/29/2018	XFER \$ FROM SEWER TO MUNICIPAL	
07392-0500	TRANSFER FROM SEWER OPERATING	1803	CD	8,160.33	-	3/26/2018	EAST GOSHEN TOWNSHIP - GENERAL	1ST QTR.2018 REIMBURSEMENT - MIA
07424-1400	BEGINNING BALANCE	1803	CD	-	100.00	-	-	GRANT APPLIC. DCED - WATER & SEWER
07424-1400	ADMINISTRATIVE WAGES	1801	CD	-	-	1/31/2018	COMMONWEALTH FINANCING AUTHOR BARKWAY P/S	PROGRESS BILLING - M.AUTHORITY 2017
07424-3000	BEGINNING BALANCE	1803	CD	6,964.00	-	3/22/2018	MAILLIE FALCONIERO & CO.	FINANCIAL STATEMENTS
07424-3000	MISCELLANEOUS EXPENSE	1801	CD	-	-	-	-	SERV.THRU 12/10/17 2017 GENERAL SERV
07424-3110	BEGINNING BALANCE	1801	CD	12,523.56	-	1/24/2018	PENNONI ASSOCIATES INC.	SERVICES THRU 1/14/18-2017 GENERAL
07424-3130	ENGINEERING SERVICES	1802	CD	5,415.00	-	2/15/2018	PENNONI ASSOCIATES INC.	SERVICE THRU 1/14/18 SUPPLEE VAL.
07424-3130	ENGINEERING SERVICES	1802	CD	552.50	-	2/22/2018	PENNONI ASSOCIATES INC.	SERVICES THRU 2/11/18 2018 GEN.SERV
07424-3130	ENGINEERING SERVICES	1803	CD	11,749.08	-	3/15/2018	PENNONI ASSOCIATES INC.	

07424-3140	BEGINNING BALANCE								
07424-3140	LEGAL SERVICES	1801 CD	680.00	-	1/24/2018	GAWTHROP GREENWOOD & HALSTED	LEGAL SERVICES DEC. 2017 GEN.AUTH.		
07424-3140	LEGAL SERVICES	1802 CD	240.00	-	2/22/2018	GAWTHROP GREENWOOD & HALSTED	LEGAL SERVICE - JAN.2018 GEN.AUTH.		
07424-3140	LEGAL SERVICES	1803 CD	400.00	-	3/19/2018	GAWTHROP GREENWOOD & HALSTED	LEGAL SERVICE - FEBRUARY 2018		
07428-1000	BEGINNING BALANCE	1802 CD	142.50	-	2/22/2018	PENNONI ASSOCIATES INC.	SERVICE THRU 1/14/18 RESERV.RD PS		
07428-1000	RESERVOIR PUMP STATION - ENGINEEF								
07429-6100	BEGINNING BALANCE	1801 CD	30,050.70	-	1/24/2018	WEST GOSHEN SEWER AUTHORITY	16.67% OF COST - ENHANCED CHEMICAL ADDITION		
07429-6100	WEST GOSHEN CAPITAL								
07429-6100	WEST GOSHEN CAPITAL	1802 CD	3,664.01	-	2/22/2018	WEST GOSHEN SEWER AUTHORITY	16.67% - ENHANCED CHEMICAL ADDITION & ANAEROBIC DIGESTOR		
07429-6100	WEST GOSHEN CAPITAL	1803 CD	(3,664.01)	-	3/15/2018	WEST GOSHEN SEWER AUTHORITY	VOID CK. 2017		
				97,575					
	Ending Fund Balance Total			72,288					
	Ending Construction Acct			25,287					
	Ending Operating Acct								

EAST GOSHEN MUNICIPAL AUTHORITY
CONCISE STATEMENTS

Concise Statement of Net Position
December 31, 2017

ASSETS	\$ 142,328
Current assets	9,045,000
Net investment in lease	<u> </u>
TOTAL ASSETS	<u>\$ 9,187,328</u>
LIABILITIES AND NET POSITION	
LIABILITIES	
Notes payable, principal due annually through 2032, variable interest rate	\$ 9,045,000
Accounts payable	42,575
Accrued interest payable	5,648
TOTAL LIABILITIES	<u>9,093,223</u>
NET POSITION	
Unrestricted	<u>94,105</u>
TOTAL LIABILITIES AND NET POSITION	<u>\$ 9,187,328</u>

Concise Statement of Revenues, Expenses and Changes in Net Position
Year Ended December 31, 2017

OPERATING REVENUES	\$ 980,722
OPERATING EXPENSES	<u>1,378,328</u>
OPERATING LOSS	<u>(397,606)</u>
NONOPERATING REVENUES (EXPENSES)	10,361
Investment income	9,692
Tapping fees	(441,000)
Transfers (to) from East Goshen Township, net	<u>(420,947)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(818,553)</u>
CHANGE IN NET POSITION	<u>912,658</u>
NET POSITION AT BEGINNING OF YEAR	<u>94,105</u>
NET POSITION AT END OF YEAR	<u>\$ 94,105</u>

A complete copy of the audited financial statements prepared by independent certified public accountants is available for public inspection in the Authority's office, Monday through Friday, between the hours of 8:00 a.m. and 4:00 p.m. The Authority's office is located at 1580 Paoli Pike, West Chester, Pennsylvania.

610-692-7171
www.eastgoshen.org

BOARD OF SUPERVISORS
EAST GOSHEN TOWNSHIP
CHESTER COUNTY
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

April 6, 2018

To: Municipal Authority

From: Mark Miller

Re: Sewer Line Replacement

As you may recall we were getting ready to overlay Tallmadge Dr. We found that the pipe has several sags. We had planned on doing the replacement in house however; the more I look at our work load we don't have time to do it. Plus, due to the depth and the amount of work I would recommend that we put the project out to bid. I asked Mike Ellis to come up with an estimate to complete the work which is attached for your review.

Mark Miller

From: Brian Miller <BMiller@Pennoni.com>
Sent: Wednesday, April 4, 2018 1:34 PM
To: Mark S. Miller (mmiller@eastgoshen.org)
Cc: Michael Ellis
Subject: EGMAU18001 Talmadge Drive Sanitary Sewer Replacement
Attachments: 2018-04-04 Tallmadge OPCC.pdf

Mark:

The attached opinion of probable construction cost is provided for budgeting purposes. Our estimated cost of \$86k before contingency, which we feel is somewhat conservative. Recent bidding has been competitive, so we wouldn't be surprised if a hungry bidder came in closer to \$70k.

Our estimate is based on pipe replacement with 2A aggregate backfill for the entire length of the pipe replacement, not including pavement restoration (to be completed by the Township). This includes the contractor providing all materials for pipe and manhole replacement. If East Goshen were to provide the materials it would add another layer to the coordination effort with the chance of delaying the contractor's activity. The contractor should be able to better coordinate deliveries of materials with their activity if they are purchasing materials and working with the haulers and suppliers directly. The raw material price of aggregate is estimated to be \$25/CY based on RS Means cost data.

If East Goshen has easy and cheap availability of pipe or aggregate that may provide a slight savings, but the overall quantity of each is still relatively low. One option to consider may be to add alternative bid items to receive a price reduction if East Goshen supplies the pipe materials.

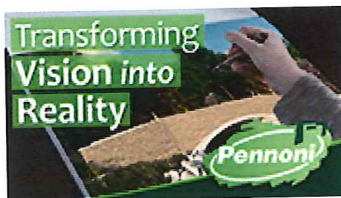
Brian Miller, PE, ENV SP, CDT

Pennoni

121 Continental Drive, Suite 207 | Newark, DE 19713

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4/4/2018

Tallmadge Drive Sanitary Sewer Replacement
East Goshen Municipal Authority
ENGINEERING OPINION OF PROBABLE CONSTRUCTION COST
(Bid Construction with Contractor provided materials; Pavement Restoration by Township)
April 4, 2018

BID ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	TOTAL	
1	10" Full Depth Pavement Demolition	SY	371	\$12.75	\$4,735.92	
3	Demolish & Remove Manhole R-34 (9 ft depth)	EA	1	\$2,270.00	\$2,270.00	
4	Misc. Excavation and Backfill	CY	5	\$70.00	\$350.00	
5	Furnish and Install 8" SDR26 PVC (8-10' deep)	LF	537	\$108.00	\$57,996.00	
6	Furnish and Install 4" SDR26 PVC Pipe for Lateral Replacement (8-10' depth) (6 Laterals @ 5 LF EA)	LF	30	\$101.00	\$3,030.00	
7	Furnish and Install 4' Dia. Sanitary Manhole	EA	1	\$4,300.00	\$4,300.00	
8	Core Drill Existing Manhole	EA	2	\$2,000.00	\$4,000.00	
9	Bypass Pumping	LS	1	\$3,500.00	\$3,500.00	
Subtotal					\$80,182	
				Bonds & Insurance	2.0%	\$1,604
				Mobilization / Demobilization	5.0%	\$4,009
Subtotal					\$5,613	
TOTAL					\$85,795	
				Total with Contingency of:	10%	\$94,374
SAY					\$95,000	

NOTE: An engineering opinion of probable construction cost is made by an engineer, and not by a professional construction cost estimator or construction contractor. The accuracy of the engineering opinion cannot be guaranteed.

March 27, 2018

EGMA1702

East Goshen Municipal Authority
Attn: Rick Smith, Township Manager
1580 Paoli Pike
West Chester, PA 19380

RE: Semi-Annual Sewer System Status Report #17
East Goshen Municipal Authority

Dear Mr. Smith:

The following Semi-Annual Sewer System Status Report is a continuation of the reports previously required under the Consent Order & Agreement (CO&A) executed between the Pennsylvania Department of Environmental Protection (PADEP) and the East Goshen Municipal Authority in December 2008. Mandatory reporting to the PADEP ended on March 31, 2012, so this report will serve as an internal document for the Township. This report continues to describe the progress made towards achieving the milestone events listed in the Corrective Action section of the CO&A including the actions taken within the previous six-month period and those which will be taken in the subsequent six-month period. The term "Corrective Action" has been replaced with "Action".

EXECUTIVE SUMMARY

Meter data from November 18, 2016 through July 26, 2017 indicates inflow and infiltration (I&I) continues to occur within the Chester Creek Service Area particularly in the subarea CC-2 as depicted in Figure 1. Portions of subarea CC-2 – North Lockwood, Marydell, Pin Oaks, and commercial uses on Enterprise Drive and in the Brandywine Business Park – were previously investigated and only limited infiltration was noted. Since the portable metering investigations previously conducted indicated some base flow coming from West Goshen into CC-2, further investigation into the sources of I&I within CC-2 was conducted.

The portable metering investigation during the period from November 2016 through late-July 2017 was primarily focused in the Chester Creek Service Area. Only one portable meter was installed in the Ridley Creek Service Area.

Five portable meters were installed in November 2016 to isolate areas of I&I within the Chester Creek Service Area:

- One portable meter was installed within sub area CC-3 near the Waterview Swim Club at Manhole C-202. The data was separated into three periods and based upon the meter data and a comparison of the second and third periods' average daily flow rates to the sewer billing records, it can be concluded that there is minimal I&I occurring upstream of C-202.
- Another portable meter was installed within sub area CC-1 in Manhole C-186 at the intersection of West Chester Pike and Reservoir Road. The data was separated into two periods and based upon the meter data and a comparison of the second period's average daily flow rate to the sewer billing

records, it can be concluded that there is I&I occurring upstream of C-186 after large rain events but there are no notable issues during dry weather.

- A portable meter was installed in Manhole C-041 which is located at the intersection of Reservoir Road and Baldwin Drive. This meter malfunctioned much of the time it was installed so no data was available for analysis.
- A portable meter was installed in Manhole C-428 which is located at the intersection of Reservoir Road and Bramble Lane. The data was separated into two periods based upon the meter data and a comparison of both periods' average daily flow rates to the sewer billing records. Both periods had unaccountable flow. Therefore, it can be concluded that there is I&I occurring upstream of C-428.
- A portable meter was installed in Manhole C-037 which is located at the intersection of Reservoir Road and East Strasburg Road. The data was separated into two periods based upon the meter data and a comparison of both periods' average daily flow rates to the sewer billing records. Both periods had unaccountable flow. Therefore, it can be concluded that there is significant I&I occurring in the interceptor upstream of C-037.

An additional portable meter was installed in Manhole R-003 (Tegler) within the Ridley Creek Service Area. There are approximately 1,893 EDUs contributing to an average estimated flow of 388,065 gpd at Manhole R-003. This portable meter malfunctioned for much of the time so no data was available to analyze.

In the next six months, the Township should focus on analysis of permanent metering in the Chester Creek Service Area and the Ridley Creek Service Area.

ACTIONS

1. Action #1: Metering

Flow metering shall take place in the following subbasins for a minimum of four months out of the year, with metering conducted for a minimum of 60 days in the fall and 60 days in the spring.

Refer to Figure 1 for a map of previous and future meter locations.

Previous 6 Months:

This report analyzes meter data from November 2016 through late-July 2017. Four portable meters were installed in November 2016 and one portable meter was installed in December 2016.

Ridley Creek Service Area

- **Tegler R-003**

A portable meter is installed within Manhole R-003, along the 18-inch diameter Ridley Creek Interceptor, three manholes upstream from the Ridley Creek Sewage Treatment Plant (RCSTP). This meter measures the flow from the entire Ridley Creek Service area minus about 110 households from Hunt Country. The meter was installed in August 2014.

The meter appears to be functioning continuously through early March 2017 except for a period between January 20, 2017 and March 4, 2017. The average flow recorded from November 2016

to March 2017 was 0.43 gpm (615.6 gpd). This is clearly incorrect since the RCSTP flow are greater than 300,000 gpd and it does not appear the recorded flows are only off by an order of magnitude. We recommend removing the temporary meter since this location has not been reliable over the past couple years.

- RCSTP Permanent Influent Meter

The permanent influent meter is located on the Ridley Creek Interceptor in Manhole R-001, the first manhole upstream of the Plant. It meters all flows into the Plant's influent pump station except Plant recycle flows.

Instantaneous flow data is not currently available at this meter. Average daily volumes as reported in Big Fish Environmental's monthly O&M reports between November 2016 and June 2017 follow:

<u>Period</u>	<u>Average Daily Flow</u>
November 2016	386,824 gpd
December 2016	442,751 gpd
January 2017	435,113 gpd
February 2017	403,968 gpd
March 2017	443,194 gpd
April 2017	492,367 gpd
May 2017	442,117 gpd
June 2017	403,492 gpd

The average daily flow was approximately 10% lower in November. We theorize that during November 2016 the groundwater table was lower resulting in less infiltration and lower average flows. The average daily flow was approximately 10% higher in April. We theorize that during that April 2017 the groundwater table was higher resulting in higher infiltration and lower average flows.

Installation of a data logger at this permanent meter to record flow rates at least every hour would allow for more conclusive analysis of I&I as well as provide flow data for potential operational adjustments.

Chester Creek Service Area

- Reservoir Road C-037

There was previously a portable meter located at Manhole C-036, at the intersection of Reservoir Road and East Strasburg Road. However, this meter malfunctioned for much of the 6 months it was installed. The portable meter was removed and placed in Manhole C-037, located one manhole upstream from Manhole C-036. The meter was installed in December 2016. The meter malfunctioned for 3 days in December (12/17/2016, 12/24/2016, and 12/30/2016), one day in January (1/29/2017), 5 days in April (4/25/2017 to 4/28/2017 and 4/30/2017), and 3 days in May (5/1/2017 to 5/3/2017). In our analysis we separated the data into two periods: 12/9/16 to 4/29/2017 and 5/4/17 to 7/26/17. This is because the meter malfunctioned for 8 days between April and May resulting in slightly different trends between the two periods.

The average daily flow for the first period was 378 gpm (543,580 gpd) with a maximum flow of 1,105 gpm (1,590,883 gpd) resulting in a peaking factor of 2.93. The average minimum flow is

estimated to be 317,345 gpd, which is about 58% of the average daily flow. There is approximately 83,334 gpd of unaccounted flow when comparing the average daily flow for the first period (543,580 gpd) to the expected average daily flow 460,246 gpd (210,945 gpd from the 2016 sewer billing records (at 225 gpd/EDU) plus average daily flow of 249,301 gpd from West Goshen Township).

The average daily flow for the second period was 442 gpm (637,047 gpd) with a maximum flow of 1,309 gpm (1,884,989 gpd) resulting in a peaking factor of 2.96. The average minimum flow is estimated to be 394,664 gpd, which is about 62% of the average daily flow. There is approximately 176,801 gpd of unaccounted flow when comparing the average daily flow for the second period (637,047 gpd) to the expected average daily flow of 460,246 gpd.

Consistent with prior analyses we conclude there is significant I&I occurring upstream of this location. Additionally, there are a few instances in the second period where the flow increases by approximately 120% during storm events greater than one-inch precipitation. **Therefore, it can be concluded that significant continuous infiltration plus inflow during large storm events is occurring upstream of C-037.**

- Waterview C-202

A portable meter was installed within Manhole C-202, which is located near the Waterview Swim Club. The meter was installed in November 2016. The meter malfunctioned for 6 days in December (12/11/2016 to 12/16/2016), 4 days in February (2/10/2017 to 2/13/2017), one day in March (3/31/2017), and 10 days in April (4/1/2017 to 4/10/2017). In our analysis we separated the data into three periods: 11/18/16 to 3/30/17, 4/11/17 to 6/1/17, and 6/2/17 to 7/12/17. This is because the meter malfunctioned for 11 days between March and April resulting in slightly different trends between the two periods. Additionally, at the beginning of June the readings for level of water within the pipe significantly decreased, possibly due to a blockage being removed from the line. The following table displays the flow rates, estimated base flow rates, and peaking factors for the three periods.

	Average Daily Flow		Maximum Flow		Est. Base Flow		Peaking Factor
	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	
Period One (11/18/16 to 3/30/17)	221	318,212	918	1,322,077	96	138,053	4.15
Period Two (4/11/17 to 6/1/17)	134	193,493	356	483,797	49	70,443	2.50
Period Three (6/2/17 to 7/12/17)	83	119,586	261	375,441	20	28,289	3.14

In the first period, the average base flow is estimated to be 138,053 gpd, which is about 43% of the average flow. There is approximately 131,252 gpd of unaccounted flow when comparing the average daily flow for the first period (318,212 gpd) to the expected flow of 186,960 gpd from the 2016 sewer billing records. The accuracy of the meter data from the first period is questionable, because the level drastically decreases between the first and second period. We assume the drastic decrease between the first and second period is due to a blockage being removed or the meter being recalibrated while the meter was offline in April. Due to the questionable accuracy of this data the first period is not included in our overall analysis of the Waterview meter.

In the second period, the average base flow is estimated to be 70,443 gpd, which is about 36% of the average flow. However, there is only approximately 6,533 gpd of unaccounted flow when comparing the average daily flow for the second period (193,493 gpd) to the expected flow of 186,960 gpd from the 2016 sewer billing records.

In the third period, the average base flow is estimated to be 28,289 gpd, which is about 24% of the average flow. However, there is no unaccounted flow when comparing the average daily flow for the third period to the expected flow of 186,960 gpd from the 2016 sewer billing records.

There is likely minimal I&I occurring upstream of this location because periods two and three had little to no unaccountable flow when comparing the average daily flow to the estimated flow from the 2016 sewer billing records. Additionally, there was no apparent correlation between precipitation and flow at this meter. **Therefore, it can be concluded that there is minimal I&I occurring upstream of C-202.**

- West Chester Pike (SR 0003) C-186

A portable meter was installed within Manhole C-186, which is located at the intersection of West Chester Pike and Reservoir Road. This meter records the flow along West Chester Pike until Reservoir Road including The Metropolitan and Rose Hill Apartments. The meter was installed in November 2016. The meter malfunctioned for 3 days in November (11/19/2016 to 11/21/2016) and 13 days in March (3/10/2017 to 3/22/2017). In our analysis we separated the data into two periods: 11/18/16 to 3/22/17 and 3/23/17 to 7/26/17. This is because the meter malfunctioned for 13 days in March resulting in slightly different trends between the two periods.

The accuracy of the meter data from the first period is questionable, because the level and velocity readings are not consistent. The data was generally stable during the second period. The second period had an average daily flow of 12 gpm (17,940 gpd) with a maximum flow of 61 gpm (87,600 gpd) resulting in a peaking factor of 4.88. The average base flow is estimated to be 2,743 gpd, which is about 15% of the average flow. There is no unaccounted flow when comparing the average daily flow for the second period (17,940 gpd) to the expected flow of 25,420 gpd from the 2016 sewer billing records.

There is likely only minimal dry weather infiltration occurring upstream of this location because the second period had no unaccountable flow when comparing the average daily flow to the expected flow from the 2016 sewer billing records. However, there was correlation between precipitation and flow at this meter indicating potential wet weather I&I. Many of the instances where the base flow was not zero occurred the day after a rain events greater than one-inch. **Therefore, it can be concluded that there is I&I occurring upstream of C-186 after large rain events.**

- Baldwin Drive C-041

A portable meter was installed within Manhole C-041, which is located at the intersection of Reservoir Road and Baldwin Drive. The meter was installed in November 2016. This meter records the flow from the interceptor along the East Branch Chester Creek. The meter data had many instances of zero velocity even though the level reading was above zero. This anomaly occurred throughout the duration of the installation. The recorded average flow rate of 43,779 gpd at this meter is very low compared to the expected flow of 130,275 gpd from sewer billings records plus

average flow of 139,382 gpd from West Goshen Township. **Therefore, no conclusion regarding I&I can be reached from the data collected.**

- Bramble Lane C-428

A portable meter was installed within Manhole C-428 located at the intersection of Reservoir Road and Bramble Lane. The meter was installed in November 2016. This meter records flows from Marydell Drive, Wilson Lane, Wyndham Lane, and a portion of Barker Drive. In our analysis we separated the data into two periods: 11/18/16 to 4/9/17 and 4/10/17 to 7/26/17. This is because prior to 4/10/17 the velocity and level readings were inconsistent and after 4/10/17 the velocity and level readings were more stable.

The average daily flow for the first period was 44 gpm (63,780 gpd) with a maximum flow of 212 gpm (305,467 gpd) resulting in a peaking factor of 4.79. The average base flow is estimated to be 21,568 gpd, which is about 34% of the average flow. There is approximately 37,130 gpd of unaccounted flow when comparing the average daily flow for the first period (63,780 gpd) to the expected flow of 26,650 gpd from the 2016 sewer billing records.

The average daily flow for the second period was 49 gpm (70,029 gpd) with a maximum flow of 179 gpm (22,541 gpd) resulting in a peaking factor of 3.67. The average base flow is estimated to be 22,541 gpd, which is about 32% of the average flow. There is approximately 43,379 gpd of unaccounted flow when comparing the average daily flow for the second period (70,029 gpd) to the expected flow of 26,650 gpd.

There is likely continuous infiltration occurring upstream of this location. Additionally, there are a few instances in the second period where the flow increases by around 135% during storm events greater than one-inch, inducing inflow. **Therefore, it can be concluded that I&I is occurring upstream of C-428.**

- Permanent Chester Creek Service Area Meters

Flow data from the eight permanent meters throughout the Chester Creek Service Area were analyzed for 2017; six of the meters are in gravity interceptor sewers and two are on pump station discharge pipes. Instantaneous or hourly meter data is not recorded on these meters; therefore, only a rough flow analysis can be performed because inflow peaks and continuous base flows are unknown.

The Westtown Way meter records the total flow from the Chester Creek Service Area including flows from West Goshen Township. The average flow at Westtown Way for 2017 was 960,208 gpd with the average flow from the East Goshen portion of the Chester Creek Service Area comprising 685,714 gpd. East Goshen's portion of the flow in the Chester Creek Service Area comprised approximately 71% of the total flow to the Westtown Way meter. Additionally, East Goshen's portion of the flow in the Chester Creek Service Area has comprised approximately 73% of the total flow to the Westtown Way meter consistently from 2013 to 2017. The flow from West Goshen is very consistent at about 252,000 gpd from 2015 through 2017 including during and after storm events. Fluctuations at the Westtown Way meter are therefore primarily due to fluctuation of flow from within the East Goshen portion of the system.

We also analyzed East Goshen's 2016 Sewer Billing Unit Flow compared to the flow data from the 2016 permanent meters. We separated the Chester Creek Service Areas into four sub-areas, as

seen in Figure #1. Based on this analysis we determined that the area between Paoli Pike and East Strasburg Road has the largest amount of unaccountable flow, consistent with the prior years analysis. Therefore, this sub-area is considered to have the highest amount of I&I and should be investigated further. However, the Hicks meter was offline for the 2017 calendar year; therefore, our analysis uses the average daily flows from the 2016 calendar year for the Hicks meter to determine sub-area flows.

Next 6 Months:

We recommend the following actions for the next six months:

- Continue to monitor permanent meters in the Chester Creek Service Area
- Remove all the portable meters within the Chester Creek Service Area and the Ridley Creek Service Area. Temporarily discontinue portable metering within their systems due to repetitive issues with the temporary meters and the lack of staff and resources to adequately maintain the meters. All the permanent meters within East Goshen, except for the Paoli Pike meter, have cellular service. Due to the permanent meters having cellular service, the data can be recorded and analyzed more frequently than in prior years; therefore, the I&I monitoring will be focused on the permanent meters for the next 6 to 12 months. Portable meters may be used on an as-needed basis to isolate any problems identified from the permanent meters.
- Obtain and review monthly DMR readings from the Ridley Creek Treatment Plant

2. Action #2: Televising

Televising and visual inspections should continue on an ongoing, as-needed basis in order to discover areas of excessive I&I and to measure the effectiveness of I&I rehabilitation measures.

Previous 6 Months:

- Televising:
 - Supplee Valley

Next 6 Months:

- TBD following analysis of flows after Supplee Valley CIPPL project.

3. Action #3: System Hydraulic Characterization

The sanitary sewer collection system tributary to the Ridley Creek Sewage Treatment Plant should be modeled and hydraulically evaluated in order to determine if any physical constraints exist which would not allow for the conveyance of peak wet weather flow.

- The System Hydraulic Characterization was completed and submitted to DEP in November 2009 as required by the CO&A.

4. Action #4: Rehabilitation

Areas within the sanitary sewer collection system which have been identified as needing rehabilitation, per the investigations mentioned above, should be rehabilitated.

Previous 6 Months:

- Replaced manhole covers within the Meadows development

Next 6 Months:

- Continue to conduct rehabilitation of sewers, manholes, and laterals as determined by ongoing investigations, including repair of leaks and replacement of cleanout caps and cleanout pipes that have pulled out of lateral piping.
- Replace manhole castings and lids in roads to be paved.
- Repair break in sanitary sewer line between Manhole C431 and C430.
- Cured-in-place pipe lining of 5,000 L.F. of 8-inch diameter asbestos cement pipe and pressure grouting two manholes within Supplee Valley development.

5. Action #5: Post-Rehabilitation Flow Metering

Flow metering should take place in areas that have been rehabilitated in order to document the effectiveness of the rehabilitative work. The metering should take place during both the fall and spring of the year.

Previous 6 Months:

- The portable meters installed over the past 6 months did not provide any data that is relevant to rehabilitations completed within the past 6 months.

Next 6 Months:

- Data from the permanent meters will be analyzed following the Supplee Valley CIPPL project.

6. Action #6: House Lateral Investigation Program

The House Lateral Investigation Program ("HLIP") was implemented in conformance with the provisions of the HLIP contained in the February 28, 2008, letter from East Goshen.

Previous 6 Months:

- Continued to replace cleanout caps at no charge to property owners in the Ridley Creek and Chester Creek Service Areas upon request by property owners or observation by Public Works or Codes Department staff.
- Continued to repair defective laterals and cleanouts for property owners to ensure that the work is done properly as indicated in Action #4.
- Re-occupancy inspections were performed at the sale of residences and commercial establishments throughout the Township looking for direct inflow from building sump pumps.

Next 6 Months:

- Continue to inspect sanitary sewer cleanouts/vents in conjunction with the televising efforts performed under Action #2.
- Continue Township policy regarding replacement of cleanouts, vent caps, and laterals.
- Continue re-occupancy inspections at the sale of properties including looking for direct inflow from building sump pumps.
- Repair of defective laterals and cleanouts by the Township for property owners to ensure that the work is done properly.

7. Action #7: Reporting

Semi-Annual Status Reports should be submitted to the East Goshen Municipal Authority to describe the progress made towards achieving the previous Corrective Action milestone events.

Previous 6 Months:

- Submitted a draft, amended Semi-Annual Sewer System Status Report #16 to the Municipal Authority on April 10, 2017.

Next 6 Months:

- Prepare and submit Semi-Annual Sewer System Status Report #18 to the Municipal Authority by June 30, 2018.

If you should have any questions, please do not hesitate to contact me.

Sincerely,

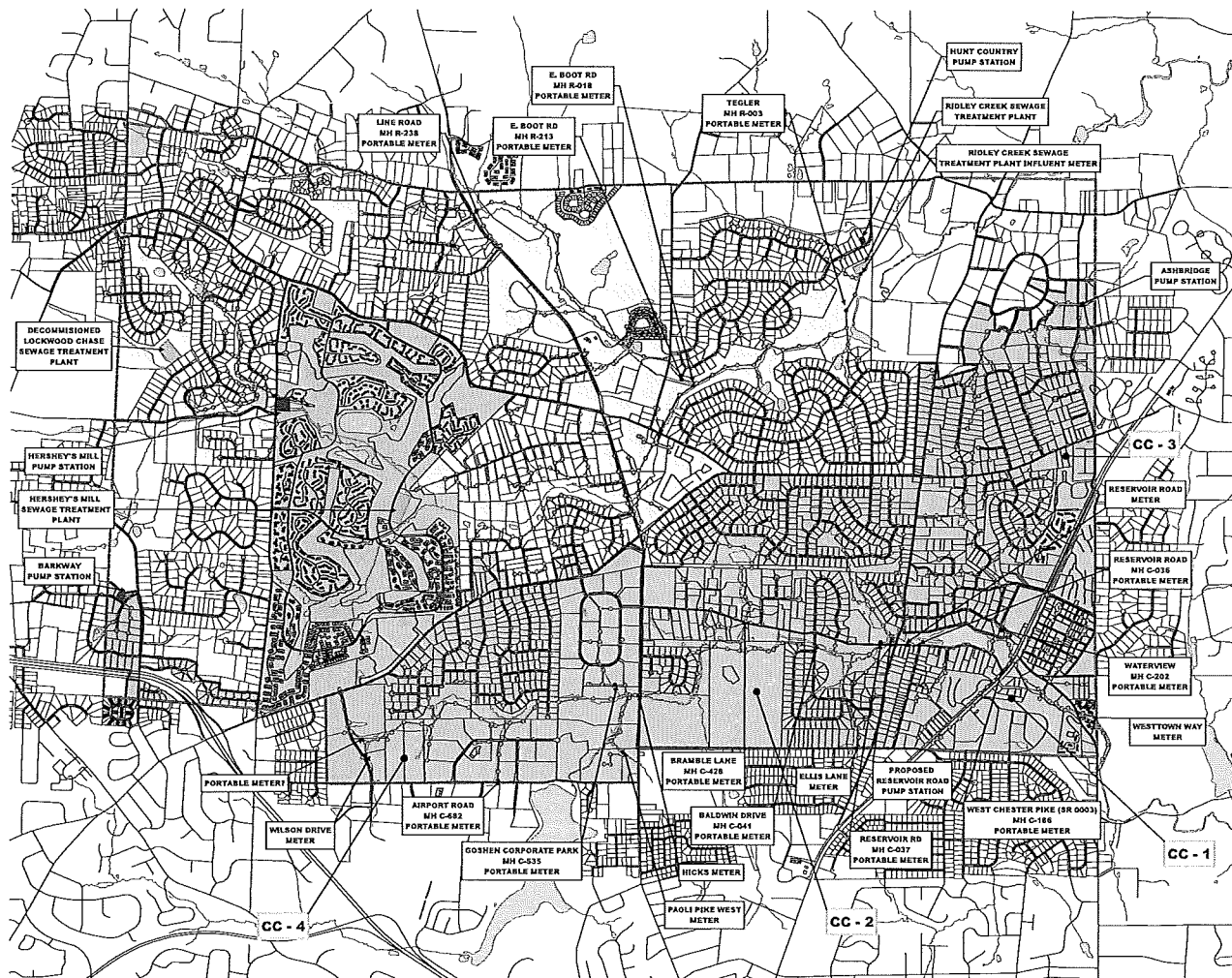
PENNONI ASSOCIATES INC.



Michael J. Ellis, PE
Authority Engineer

cc: Mark Miller, Public Works Director
East Goshen Municipal Authority

EAST GOSHEN WASTEWATER FACILITIES FIGURE 1



- Legend**
- Roads
 - TOWNSHIP BOUNDARY
 - ▭ SubAreas
 - ▭ PUMP STATION
 - ▭ SEWAGE TREATMENT PLANT
 - PERMANENT METER
 - PORTABLE METER
 - SANITARY MANHOLE
 - ▭ Parcels_assessment
 - ▭ PONDS & LAKES
 - RIVERS
 - FORCEMAIN
 - SANITARY SEWER
 - ▭ EAST WHITELAND SERVICE AREA
 - ▭ HERSHEY'S MILL SERVICE AREA
 - ▭ RIDLEY CREEK SERVICE AREA
 - ▭ WEST GOSHEN SERVICE AREA
 - ▭ WESTTOWN SERVICE AREA

