

**EAST GOSHEN MUNICIPAL AUTHORITY**

**March 11, 2019**

**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.

4. APPROVAL OF MINUTES

- a. February 11, 2019

4. APPROVAL OF INVOICES

|                            |    |          |
|----------------------------|----|----------|
| Pennoni Invoice #847705    | \$ | 2,386.13 |
| Pennoni Invoice #847706    | \$ | 2,949.25 |
| Pennoni Invoice #847707    | \$ | 1,729.75 |
| Pennoni Invoice #847708    | \$ | 805.25   |
| Pennoni Invoice #847709    | \$ | 2,766.50 |
| Pennoni Invoice #847710    | \$ | 2,483.25 |
| Gawthrop Greenwood #204628 | \$ | 620.00   |

6. LIAISON REPORTS

7. FINANCIAL REPORTS

- a. February Financial Report

8. OLD BUSINESS

- a.

9. GOALS

- a. Continue to monitor the upgrades at West Goshen Sewer Plant. Jack and Phil have been attending meetings.  
b. Continue to implement the I&I Plan – 3-8-2018 completed

- c. Submit articles for the newsletter – The fall newsletter included an article about flushable wipes; the winter newsletter was submitted with an article about the improvements at WGSTP.

10. NEW BUSINESS

- a. West Goshen STP Update
- b. Semi-Annual Sewer System Status Report #18

11. CAPACITY REQUESTS

12. ANY OTHER MATTER

13. CORRESPONDENCE AND REPORTS OF INTEREST

14. PUBLIC COMMENT

15. ADJOURNMENT

EAST GOSHEN MUNICIPAL AUTHORITY  
EAST GOSHEN TOWNSHIP  
1560 PAOLI PIKE, WEST CHESTER, PA 19380-6199

March, 8, 2019

To: Municipal Authority  
From: Mark Miller  
Re: February 2019 Monthly Report

**Monthly Flows:** The average daily flow to West Goshen was 950,000 gallons per day. No problems to report.

**Meters:** All meters were read on a daily basis with no problems to report. We have three portable meters on the exit lines from Bowtree which are being read on a daily basis.

**C.C. Collection:** We have been actively looking for INI since the last Authority meeting, we have televised and repaired several severe leaks. One leak alone dropped the flow at the Ashbridge pump station by **28,000** gallons a day. The six manhole repairs showed another **16,000** gallons a day for a total of **44,000** gallons a day.

**R.C. Collection:** We did two additional point repairs, they have been done since the last Authority meeting, the estimated INI was **4,500** gallons a day.

**R.C. Plant:** We cleaned the grit chamber in the screen room. The flow meter located in the field was reading incorrectly, Allied Control was utilized to calibrate the meter.

We televised 5500 feet of pipe this month. We pulled manhole's on both systems at night looking for INI. The Public Works Department has also been repairing sewer lateral cleanouts.

Pipe Data View was utilized to do manhole grouting on eight manholes on the Ashbridge system.

The Beale Township was very grateful for the generator donation, they called to tell us that the unit has been installed.

**Alarms:** We responded to 26 alarms for February ranging from power outages to high level alarms.

**PA One Calls:** PA One Calls are starting to pick-up as the pipeline is getting ready to start.

**Monthly Rainfall:** 2.50 inches for February



**EAST GOSHEN MUNICIPAL AUTHORITY  
ENGINEER'S REPORT  
March 8, 2019**

**Invoices**

- Invoices with summaries are provided under separate cover.

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

- No activity since last report.

**Barkway Pump Station Grinder**

- Design plans had previously been submitted to the Township for review. The Public Works Department (PWD) subsequently televised the sewer run upstream of the pump station wet well due to bend fittings that were believed to be in the gravity sewer near the proposed manhole location. The bends were found to exist. We are revisiting the proposed location of the manhole accordingly. The plans will then be finalized for construction.
- The lead time for the equipment is about 4 months.

**Ashbridge Pump Station Force Main**

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

**Tallmadge Drive Sewer Main Replacement**

- The contractor completed work on December 19, 2018. However, major and minor deficiencies that required monitoring and/or repair were identified during manhole vacuum testing and post-construction pipe televising. Repairs to the constructed work were performed over 8 active work days between January 16 and February 6. The PWD performed several TV inspections of the re-work as it progressed and after completion to monitor if the repairs were adequate. Due to the pipe sags (prior to repairs), there was debris built-up in the pipes, so the contractor brought out Pipe Data View to jet the pipes after completing the re-work. As a result of the high flows in these sewers, the PWD performed a post-repair TV inspection of the sewers around 4:00 am on February 13 with the upstream Hershey's Mill Pump Station turned off.
- An update of punchlist work follows with further description in the attached markups to the January 3 deficiency letter:
  - The pipe projecting into manhole R-033 was cut back so this item is satisfied.
  - The leaking joints within manhole R-032 were caulked. This will be revisited in the mid-to-late March inspection to confirm the repair remains adequate.
  - Damaged curb at the entrance island and cul-de-sac needs to be replaced.
  - The damaged manhole frame of manhole R-035 (in the cul-de-sac) needs to be replaced.
  - The shifted manhole frames on R-034 and R-032 need to be reset.
  - Landscape restoration, topsoiling, seeding, and clean-up disturbed areas is required.

- Re-televising of all sewer mains and vacuum testing of R-033 has been directed to performed in mid-to-late March (no earlier than 3/18 to allow 30 days since repair work). We will perform an evaluation of the manholes at the same time. The plan is that all repairs and punchlist work shall be completed by mid-April so the Township can perform final paving by the end of April.
- The contractor was paid the 2<sup>nd</sup> invoice on February 15.

### **I&I Support and Reporting**

- We submitted semi-annual I&I report #18 on February 14.
- We analyzed the first two weeks of portable metering at three locations in Bow Tree, from February 8-20, and we provided findings and recommendations to the Township. To summarize, there were very low overnight base flows at two of the metering locations, indicating little to no continuous infiltration. There was  $\pm 10$  gpm of continuous base flow at the Achcom Way meter, and that location also experienced a significant increase in flow on February 13, after a 0.55" rain event. We recommend further visual and/or TV inspections be performed upstream of this meter.

### **New Connections**

- No activity since last report regarding review of plans for new connections.
- We recommend the Sewers Ordinance be amended to incorporate a few Township policies (i.e. minimum 6" laterals for non-residential uses, grinder pumps conveying into gravity laterals at the ROW line, prohibiting internal manhole drop connections) that have been the source of comments in multiple recent plan submissions.

### **West Goshen Sewer System Consultation**

- No activity since last report.

### **Hershey's Mill Pump Station**

- We completed the evaluation of sizing for a replacement generator including review of the projected future flows at the pump station, initial calculations for potential pump upgrades to meet the future demand, and evaluation of the existing electrical load and the potential additional load from future larger pumps. A summary memo is being prepared that we expect to submit to the Township on March 11.

### **Chapter 94 Reports**

- We completed the tributary system Chapter 94 Report for the Westtown Service Area, and we submitted it to Westtown Township for inclusion in their full report submission to DEP.
- We completed the tributary system Chapter 94 Report for the West Goshen Service Area, and we submitted it to West Goshen Township for inclusion in their full report submission to DEP. To summarize the report:
  - East Goshen's average daily flow was 781,000 gpd in 2018, which is a significant increase from 2017. This is considered to be the result of the extreme precipitation in 2018. See the attached Table 1 excerpt from the report.
  - The actual flow rate in 2018 was 221 gpd/EDU. While this is greater than in previous years (see attached Table 5 excerpt), it is under the design flow rate of 225 gpd/EDU. This is considered to be evidence of the success of the Township's aggressive I&I elimination program, since the actual flow rate remained lower than design despite the extreme precipitation in 2018.

- The 5-year projected average flow to West Goshen is 746,000 gpd. Refer to the attached Chart 1 excerpt.
- The Barkway and Ashbridge Pump Stations operated within their permitted capacities in 2018 and are projected to continue to do so.
- We are finalizing the RCSTP Chapter 94 Report, and we expect to submit it to the Township by March 15 for review.



**Following are updates from the 2/13/2019 pipe videos, performed by Public Works  
and repair work from 2/15/2019**

www.pennoni.com

January 3, 2019

EGMAU18004

Randall Weaver  
Iron Eagle Excavating  
35 Ann Street  
Highspire, PA 17034

**Re: Notice of Deficiencies & Resolution Requirements  
Tallmadge Drive Sewer Replacement, Contract No. TD-2018-2  
East Goshen Municipal Authority, Chester County, PA**

Dear Mr. Weaver:

On behalf of the East Goshen Municipal Authority, you are hereby notified of the following deficiencies in the work performed for the subject contract, based on field testing, visual observation, and sewer video footage, and documented herein are the corrective actions that have been verbally discussed:

MH R-034 to MH R-033

1. 0' to 26' – Severe sag (30-40%) **Addressed**
2. 6' – Infiltration runner at solid coupling joint **Addressed**
3. 235' to 260' – Minor sag ( $\pm 10\%$ ) **Minor sag at  $\pm 10 - 20\%$**
4. 340' to 353' – Minor sag ( $\pm 10\%$ ) **Minor sag at  $\pm 10 - 15\%$**
5. 380' to 400' (last 20' of run into MH R-033) – Water sitting in pipe; however, this may be backup from the bypass pump hose partially blocking the downstream manhole channel during the televising
6. MR R-033 failed the vacuum test **#6 Remains outstanding** **#5 It appears the hose was obstructing flow and this is not an issue**

MH R-033 to MH R-032

7. 0' to 14' – Minor sag ( $\pm 10\%$ ) **Remains approximately the same**
8. MH R-032 – The abandoned pipe has an infiltration runner into the manhole **Addressed**

Items 1, 2, 6, and 8 must be repaired by January 25, 2019, including the replacement of any temporary pavement removed. Items 1 and 2 shall be corrected via excavated repair. Item 8 shall be repaired by the installation of a screw plug as well as brick and mortar. Vacuum testing and television of the repaired manhole and severely sagging pipe, respectively, shall be performed within three days following construction. A pre-construction meeting shall be conducted at the site at least seven days prior to work between the Township, Pennoni, and Iron Eagle Excavating.

Items 3, 4, and 7, which include minor sags totaling approximately 52 linear feet, may be repaired now or re-evaluated at the end of March 2019. If you choose to re-evaluate, the re-evaluation must occur by sewer televising performed by the same company that performed the original televising with the same equipment and under the exact same bypass pump conditions. If, at the end of March, the sags in these areas have not increased, these pipe sections can be found acceptable. However, if any additional sagging is observed, that section of pipe will need to be repaired.

It is unclear if item 5 is an actual issue. This area needs to be re-evaluated by televising when the January repairs are made and repaired if needed to eliminate sags and standing water.



Further, the entirety of the contract work shall be re-televised after all repairs are performed. Any minor sag repairs must be completed by the end of April 2019. No work will be considered to be accepted until all repairs are satisfactorily completed and final re-televising is performed and determined acceptable by the owner. Performance and payment bonds shall remain in place until that time.

If you have any questions or need additional information, please call.

Sincerely,  
**PENNONI ASSOCIATES INC.**



Michael J. Ellis, PE  
Authority Engineer

/edj

cc: Rick Smith, Township Manager  
Jon Altshul, Assistant Township Manager  
Mark Miller, Public Works Director  
Patrick McKenna, Gawthrop Greenwood  
East Goshen Municipal Authority

U:\Accounts\EGMAU\EGMAU18004 - Tallmadge Dr Sewer Constr Phase\COMMUNICATIONS\SENT\Notice of Deficiencies 1.3.2019.docx

**Please sign below with your acknowledgement to these repair conditions.**

**ACKNOWLEDGEMENT:**

**Randall Weaver, Iron Eagle Excavating**



**DATE:**

1/4/2019

**2018 Chapter 94 Report for West Goshen Service Area  
East Goshen Township  
Chester County, Pennsylvania**

| <b>Table 1</b>                                    |              |              |              |                           |              |                              |
|---|--------------|--------------|--------------|---------------------------|--------------|------------------------------|
| <b>Hydraulic Loading <sup>(1)</sup><br/>(MGD)</b> |              |              |              |                           |              | <b>Rainfall<br/>(inches)</b> |
| <b>Month</b>                                      | <b>2014</b>  | <b>2015</b>  | <b>2016</b>  | <b>2017<sup>(2)</sup></b> | <b>2018</b>  | <b>2018</b>                  |
| January   | 0.827        | 0.779        | 0.762        | 0.763                     | 0.701        | 2.2                          |
| February  | 0.844        | 0.765        | 0.946        | 0.693                     | 0.773        | 6.6                          |
| March   | 0.881        | 0.892        | 0.825        | 0.710                     | 0.774        | 4.8                          |
| April   | 0.864        | 0.766        | 0.786        | 0.709                     | 0.735        | 3.4                          |
| May   | 1.045        | 0.702        | 0.779        | 0.730                     | 0.741        | 5.5                          |
| June  | 0.796        | 0.683        | 0.686        | 0.675                     | 0.704        | 3.4                          |
| July  | 0.672        | 0.672        | 0.630        | 0.621                     | 0.671        | 8.1                          |
| August  | 0.643        | 0.630        | 0.630        | 0.615                     | 0.747        | 10.9                         |
| September   | 0.631        | 0.606        | 0.630        | 0.609                     | 0.860        | 9.5                          |
| October   | 0.654        | 0.691        | 0.643        | 0.633                     | 0.782        | 2.7                          |
| November  | 0.673        | 0.678        | 0.661        | 0.659                     | 0.951        | 12.7                         |
| December  | 0.726        | 0.788        | 0.714        | 0.676                     | 0.933        | 6.0                          |
| <b>Annual Average (AA)</b>                        | <b>0.771</b> | <b>0.721</b> | <b>0.724</b> | <b>0.674</b>              | <b>0.781</b> | 6.3                          |
| <b>3 Month Max. Average</b>                       | 0.930        | 0.812        | 0.852        | 0.723                     | 0.889        |                              |
| <b>Ratio (3 Month Max to AA Ratio)</b>            | 1.206        | 1.126        | 1.177        | 1.072                     | 1.138        |                              |
| <b>5-Year Average Hydraulic Ratio =</b>           |              |              |              |                           | 1.144        |                              |

<sup>(1)</sup> Reported flows are East Goshen Township's portion of the flows to West Goshen as metered at the Westtown Way Meter and adjusted as described above.

<sup>(2)</sup> Ellis Lane Meter was not recorded for 12 days in April 2017 and 14 days in May 2017. The average flow between metered days was used for these 26 days.

East Goshen Township's average monthly flow through the Westtown Way Meter was 0.781 MGD in 2018. The intermunicipal agreement between East Goshen and West Goshen allows for 1.0 MGD at this meter. The 2018 average flow was within the agreement capacity.

## **2.2 Organic Loading**

There are no wastewater treatment facilities in this service area, so the Organic Loading Sampling Data (Table 2) and Organic Loading (Table 3) are not applicable to this report.

**2018 Chapter 94 Report for West Goshen Service Area  
East Goshen Township  
Chester County, Pennsylvania**

**3.0 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS**

There are no wastewater treatment facilities in this service area, so Organic Loading Projections (Table 4) are not applicable in this report.

PADEP has requested the 5-year hydraulic loading projections be determined using a 5-year adjusted annual average flow. Per the PADEP Chapter 94 Report Template, several tables and steps are required to calculate the 5-year adjusted annual average flow.

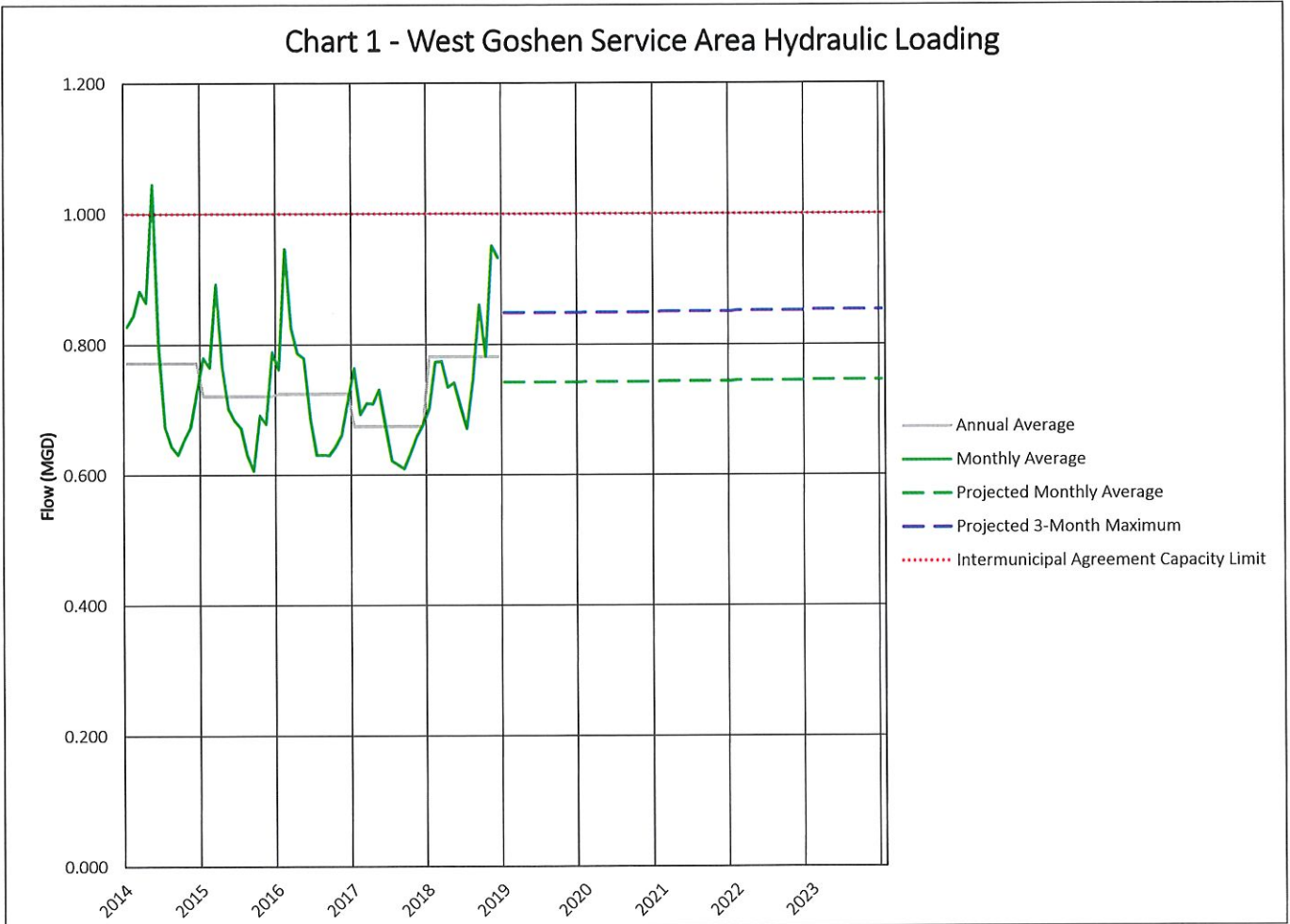
Table 5 lists the number of EDUs connected to the Authority’s West Goshen Sewer System in each calendar year for the last five years. The wastewater generation rate in gpd/EDU was determined by dividing the average daily flow for the respective calendar year by the number of EDUs connected to the system in that respective year.

There were 3 new service connections in 2018.

| <b>Table 5</b> |                            |                |                       |
|----------------|----------------------------|----------------|-----------------------|
| <b>Year</b>    | <b># of EDUs Connected</b> | <b>gpd/EDU</b> | <b>New Flow (MGD)</b> |
| 2014           | 2                          | 231            | 0.0005                |
| 2015           | 9                          | 215            | 0.0019                |
| 2016           | 65                         | 205            | 0.0133                |
| 2017           | 2                          | 191            | 0.0004                |
| 2018           | 3                          | 221            | 0.0007                |

There were approximately 3,540 EDUs connected in 2018, contributing an average flow of 0.781 MGD, which results in an average hydraulic loading rate of 221 gpd/EDU. The actual gpd/EDU flow rates in 2015 through 2018 are lower than the Authority’s 225 gpd/EDU design flow rate. The decreasing flow rates in 2015 through 2017 are believed to be the result of the Township’s I&I reduction program and ongoing system repairs. The aggressive inflow and infiltration reduction program and repairs are also believed to have resulted in the 2018 average flow being below the design flow rate despite the extreme precipitation throughout the year.

### Chart 1 - West Goshen Service Area Hydraulic Loading



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**DRAFT**  
**EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY**  
**MEETING MINUTES**  
**February 11, 2019**

The East Goshen Township Municipal Authority held its regular public meeting on Monday, February 11, 2019 at 7:00 pm at the East Goshen Township building. Members in attendance were: Chairman Kevin Cummings, Jack Yahraes, Walter Wujeik and Dana Pizarro. Also in attendance were: Mark Miller (Public Works Director), Jon Altshul (Asst. Township Manager), Michael Ellis (Pennoni), Carmen Battavio (Supervisor) and Patrick McKenna (Solicitor).

**Call to Order**

Kevin called the meeting to order at 7:00 pm and led those present in the Pledge of Allegiance and called for a moment of silence to remember our troops and first responders.

**Chairman's Report**

Kevin welcomed Walter to his first meeting. Dana provided an update on the last West Goshen Sewer Authority meeting. He reported that West Goshen is considering a number of system-wide repairs that may necessitate additional rate increases. Mark observed that other than repairs to the Westtown Way Pump Station, which is already part of West Goshen's existing capital plan, none of these improvements will impact East Goshen. Kevin encouraged the Municipal Authority to review future invoices carefully to ensure that West Goshen appropriately distinguishes between operating and capital expenses.

**Sewer Reports**

**Director of Public Works January Report**

Mark reported that monthly flows to West Goshen averaged about 900,000 last month due to the height of the water table. He noted that Public Works will be finishing the last two point repairs in the Hershey's Mill Estates collection system this week, and that portable flow meters would be set up soon in Bow Tree, and then Clocktower and eventually Hunt Country to measure any excess flows there. He added that PECO has now written up a work order to repair the transformer at the Hershey's Mill Pump Station. Finally, he stated that Iron Eagle needs to correct one more sag in the Tallmadge Drive line before we will release the next 25% payment.

**Pennoni Engineer's Report for January**

Mike reported that the Barkway Muffin Monster design is complete and it should be ready for installation in June. He noted that Pennoni has detected a 25% increase in flows over the past year in the Ridley Creek system, which corresponds with 85,000 gallons per day, presumably all due to I&I from the high water table. The increase in the Chester Creek system was less noticeable, and Mike speculated that most of that increase was from West Goshen's flows. Mike added that he has also been working on engineering work on the Hershey's Mill pump station for a new generator and potentially increasing the pumps to accommodate up to 70 new EDUs.

**Big Fish Environmental Report for January**

Mark reported that there was nothing out of the ordinary at the plant in January and that the new influent screen has been installed.



1  
2 Discussion ensued about charging Pennoni's additional time for overseeing the Tallmadge Drive  
3 repairs back to the contractor. However, no firm decision was made.

4  
5 **Minutes of January 14, 2019**

6 Dana made a motion to approve the January 14, 2019 minutes as amended. Jack seconded. The  
7 motion passed 4-0.

8  
9 **Invoices**

10 Jack made a motion to approve the following Pennoni invoices:

- 11 • #844042 for \$2,793.45
- 12 • #844045 for \$4,678.25
- 13 • #844046 for \$2,161.00
- 14 • #844047 for \$722.00
- 15 • #844048 for \$822.50
- 16 • #844049 for \$3,625.50

17  
18 Walter seconded. The motion passed 4-0.

19  
20 **Liaison Reports**

21 **Conservancy Board** – Walter mentioned that Keep East Goshen Beautiful Day is scheduled for  
22 Saturday April 13.

23  
24 **Financial Reports**

25 Jon reported that the Municipal Authority ran a \$401 surplus in January.

26  
27 **Consider Sale of Generator**

28 Mark explained that Bill Harrison, a former East Goshen resident and current Fire Chief of the Beale  
29 Township Fire Company in Juniata County had asked Mark if he had any old generators to use for a  
30 community warming station at the firehouse. Public Works has a 38 year old generator that was  
31 pulled out of the Hunt Country Pump Station when it was rebuilt two years ago. According to Mark  
32 the generator has no value and he suggested selling it for \$1. Kevin made a motion to sell the old  
33 Hunt Country pump station generator to the Beale Township Fire Company, as is, for \$1. Dana  
34 seconded. The motion passed 4-0.

35  
36 **Capital Meeting at West Goshen STP, February 26, 2019**

37 Jack and Dana indicated that they plan to attend the capital meeting at the West Goshen Plant on  
38 February 26<sup>th</sup> at 10am.

39  
40 **Consider Walter Wujcik as Assistant Secretary/Assistant Treasurer**

41 Jack made a motion to appoint Walter as the Assistant Secretary and Assistant Treasurer of the  
42 Municipal Authority. Dana seconded. The motion passed 4-0.

43  
44 **Consider EBA Engineering Energy Efficiency Proposal**

1 Members of the Municipal Authority expressed skepticism that there would be material inefficiencies  
2 identified in an energy audit at the plant, and certainly not on the order of \$7,000-\$9,000. The  
3 Authority agreed to take no further action on the matter.  
4

5 **Capacity Request**

6 Kevin stated that he signed a letter attesting that there was sufficient treatment capacity under the  
7 Municipal Authority's agreement with the West Goshen Sewer Authority to provide for a proposed  
8 new daycare facility at 1302 Wilson Drive.  
9

10 **Adjournment**

11 There being no further business, Jack moved to adjourn the meeting at 8pm. Walter seconded the  
12 motion. The motion passed 4-0. The next regular meeting will be held on Monday, March 11, 2019  
13 at 7pm.  
14

15 Respectfully submitted,  
16

17  
18 *Jon Altshul*  
19 *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 # : 847705  
Invoice Date : 03/08/2019  
Project : EGMAU17006  
Project Name : Barkway PS Muffin Monster

For Services Rendered through: 2/24/2019

Completed design and plans, and submitted to the Township for review.

| Phase Code / Name             | Contract Amount | Previously Billed | % Complete | Complete To Date | Amount This Invoice |
|-------------------------------|-----------------|-------------------|------------|------------------|---------------------|
| **** -- Professional Services | \$16,000.00     | \$12,796.95       | 94.89%     | \$15,183.08      | \$2,386.13          |
| Total :                       | \$16,000.00     | \$12,796.95       |            | \$15,183.08      | \$2,386.13          |

Amount Due This Invoice

\$2,386.13

OK

East Goshen Municipal Authority  
EGMAU17006 Invoice Summary  
Invoice Date 3/8/2019

**Project:** EGMAU17006  
**Pennoni Job No.:** Barkway PS Muffin Monster  
**Invoice No:** 847705  
**Invoice Period:** 1/28/2019 to 2/24/2019  
**Initial Authorization:** \$ 9,000.00 **Date:** 3/8/2019  
**Contract Amount:** \$ 16,000.00  
**Previously Invoiced:** \$ 12,796.95  
**Current Invoice:** \$ 2,386.13  
**Invoiced to Date (\$):** \$ 15,183.08  
**Invoiced to Date (%):** 95%  
**Remaining Budget (\$):** \$ 816.92  
**Remaining Budget (%):** 5%

**Budget by Phase:**

**Phase Name:** Barkway PS Muffin Monster  
**Phase Budget:** \$ 16,000.00  
**Previously Invoiced:** \$ 12,796.95  
**Current Invoice:** \$ 2,386.13  
**Invoiced to Date (\$):** \$ 15,183.08  
**Invoiced to Date (%):** 95%  
**Remaining Budget (\$):** \$ 816.92  
**Remaining Budget (%):** 5%

**Comments:** Completed design and plans, and submitted 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 # : 847706  
Invoice Date : 03/08/2019  
Project : EGMAU18004  
Project Name : Tallmadge Dr Sewer Constr Phase

For Services Rendered through: 2/24/2019

Phase \*\*\*\* - General construction phase services consisting of coordinating issuance of payment #2 to contractor.

Phase 01 - Construction phase services related to pipe and manhole deficiencies and associated re-work: on-site construction observation and engineering office support of re-work and pipe jetting for 3 days between January 28 and February 6, field visits to check on backfilled roadway site conditions before and after 1/29/19 snow storm, on-site and office review of multiple Public Works' TV inspection videos during and after rework, punchlist inspection, and update of the previously issued deficiency letter to contractor with new and outstanding items.

Phase : \*\*\*\* -- Professional Services

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

|               |       |
|---------------|-------|
| Labor :       | 31.75 |
| Expense :     | 0.00  |
| Phase Total : | 31.75 |

Phase : 01 -- Deficiency Assistance

Total Phase : 01 -- Deficiency Assistance

|               |          |
|---------------|----------|
| Labor :       | 2,917.50 |
| Expense :     | 0.00     |
| Phase Total : | 2,917.50 |

Amount Due This Invoice

\$2,949.25

|                    |           |
|--------------------|-----------|
| Fee :              | 9,000.00  |
| Prior Billings :   | 17,027.00 |
| Current Billings : | 2,949.25  |
| Total Billings :   | 19,976.25 |

Continued on next page...

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

...Continued from previous page

Phase : \*\*\*\* -- Professional Services

| Labor Class         | Hours/Units | Rate   | Amount       |
|---------------------|-------------|--------|--------------|
| Authority Engineer  | 0.25        | 127.00 | 31.75        |
| <b>Labor Total:</b> | <b>0.25</b> |        | <b>31.75</b> |

|  |                  |                |
|--|------------------|----------------|
| <b>Total Phase : **** -- Professional Services</b> | <b>Labor :</b>   | <b>\$31.75</b> |
|  | <b>Expense :</b> | <b>\$0.00</b>  |

Phase : 01 -- Deficiency Assistance

| Labor Class                | Hours/Units  | Rate   | Amount          |
|----------------------------|--------------|--------|-----------------|
| Authority Engineer         | 3.75         | 127.00 | 476.25          |
| Associate Professional     | 2.50         | 94.00  | 235.00          |
| Sr. Engineering Technician | 18.50        | 92.00  | 1,702.00        |
| Graduate Professional      | 0.25         | 85.00  | 21.25           |
| Engineering Technician     | 5.75         | 84.00  | 483.00          |
| <b>Labor Total:</b>        | <b>30.75</b> |        | <b>2,917.50</b> |

|  |                  |                   |
|--|------------------|-------------------|
| <b>Total Phase : 01 -- Deficiency Assistance</b> | <b>Labor :</b>   | <b>\$2,917.50</b> |
|  | <b>Expense :</b> | <b>\$0.00</b>     |

|  |                  |                   |
|--|------------------|-------------------|
| <b>Total Project : EGMAU18004 -- Tallmadge Dr Sewer Constr Phase</b> | <b>Labor :</b>   | <b>\$2,949.25</b> |
|  | <b>Expense :</b> | <b>\$0.00</b>     |

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

East Goshen Municipal Authority  
 EGMAU18004 Invoice Summary  
 Invoice Date 3/8/2019

Project: EGMAU18004  
 Pennoni Job No.: Tallmadge Drive Sewer Construction Phase  
 Invoice No: **847706**  
 Invoice Period: 1/28/2019 to 2/24/2019  
 Initial Authorization: \$ 9,000.00 Date: 3/8/2019  
 Contract Amount: \$ 9,000.00  
 Previously Invoiced: \$ 17,027.00  
 Current Invoice: \$ 2,949.25  
 Invoiced to Date (\$): \$ 19,976.25  
 Invoiced to Date (%): 222%  
 Remaining Budget (\$): \$ (10,976.25)  
 Remaining Budget (%): -122%

**Budget by Phase:**

Phase Name: Tallmadge Drive Sewer Construction Phase  
 Phase Budget: \$ 9,000.00  
 Previously Invoiced: \$ 12,960.25  
 Current Invoice: \$ 31.75  
 Invoiced to Date (\$): \$ 12,992.00  
 Invoiced to Date (%): 144%  
 Remaining Budget (\$): \$ (3,992.00)  
 Remaining Budget (%): -44%

Phase Name: Deficiency Assistance  
 Phase Budget: \$ -  
 Previously Invoiced: \$ 4,066.75  
 Current Invoice: \$ 2,917.50  
 Invoiced to Date (\$): \$ 6,984.25  
 Invoiced to Date (%): 0%  
 Remaining Budget (\$): \$ (6,984.25)  
 Remaining Budget (%): 0%

**Comments:** Phase \*\*\*\* - General construction phase services consisting of coordinating issuance of payment #2 to contractor.  
 Phase 01 - Construction phase services related to pipe and manhole deficiencies and associated re-work: on-site construction observation and engineering office support of re-work and pipe jetting for 3 days between January 28 and February 6, field visits to check on backfilled roadway site conditions before and after 1/29/19 snow storm, on-site and office review of multiple Public Works' TV inspection videos during and after rework, punchlist inspection, and update of the previously issued deficiency letter to contractor with new and outstanding items.



# 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 # : 847707  
Invoice Date : 03/08/2019  
Project : EGMAU18005  
Project Name : Hershey's Mill Generator Replace

For Services Rendered through: 2/24/2019

Continued analysis, scoping, sizing, and vendor coordination for generator replacement; performed calculations for potential future pump upgrades and resultant generator demands; cost estimating; and prepared summary memo of evaluation and pricing.

**Phase : 01 -- Concept Design**

**Total Phase : 01 -- Concept Design**

Labor : 1,729.75  
Expense : 0.00  
Phase Total : 1,729.75

**Amount Due This Invoice**

\$1,729.75

Fee : 5,000.00  
Prior Billings : 2,462.50  
Current Billings : 1,729.75  
Total Billings : 4,192.25

OK

**Phase : 01 -- Concept Design**

| Labor Class                | Hours/Units  | Rate   | Amount          |
|----------------------------|--------------|--------|-----------------|
| Authority Engineer         | 1.25         | 127.00 | 158.75          |
| Senior Professional        | 5.00         | 121.00 | 605.00          |
| Sr, Engineering Technician | 10.50        | 92.00  | 966.00          |
| <b>Labor Total:</b>        | <b>16.75</b> |        | <b>1,729.75</b> |

**Total Phase : 01 -- Concept Design**

Labor : \$1,729.75  
Expense : \$0.00

**Total Project : EGMAU18005 -- Hershey's Mill Generator Replace**

Labor : \$1,729.75  
Expense : \$0.00

East Goshen Municipal Authority  
EGMAU18005 Invoice Summary  
Invoice Date 3/8/2019

|                               |                                      |              |           |
|-------------------------------|--------------------------------------|--------------|-----------|
| <b>Project:</b>               | EGMAU18005                           |              |           |
| <b>Pennoni Job No.:</b>       | Hershey's Mill Generator Replacement |              |           |
| <b>Invoice No:</b>            | <b>847707</b>                        |              |           |
| <b>Invoice Period:</b>        | 1/28/2019                            | to           | 2/24/2019 |
| <b>Initial Authorization:</b> | \$ 5,000.00                          | <b>Date:</b> | 3/8/2019  |
| <b>Contract Amount:</b>       | \$ 5,000.00                          |              |           |
| <b>Previously Invoiced:</b>   | \$ 2,462.50                          |              |           |
| <b>Current Invoice:</b>       | \$ 1,729.75                          |              |           |
| <b>Invoiced to Date (\$):</b> | \$ 4,192.25                          |              |           |
| <b>Invoiced to Date (%):</b>  | 84%                                  |              |           |
| <b>Remaining Budget (\$):</b> | \$ 807.75                            |              |           |
| <b>Remaining Budget (%):</b>  | 16%                                  |              |           |

**Budget by Phase:**

|                               |                                      |  |  |
|-------------------------------|--------------------------------------|--|--|
| <b>Phase Name:</b>            | Hershey's Mill Generator Replacement |  |  |
| <b>Phase Budget:</b>          | \$ 5,000.00                          |  |  |
| <b>Previously Invoiced:</b>   | \$ 2,462.50                          |  |  |
| <b>Current Invoice:</b>       | \$ 1,729.75                          |  |  |
| <b>Invoiced to Date (\$):</b> | \$ 4,192.25                          |  |  |
| <b>Invoiced to Date (%):</b>  | 84%                                  |  |  |
| <b>Remaining Budget (\$):</b> | \$ 807.75                            |  |  |
| <b>Remaining Budget (%):</b>  | 16%                                  |  |  |

**Comments:** Continued analysis, scoping, sizing, and vendor coordination for generator replacement; performed calculations for potential future pump upgrades and resultant generator demands; cost estimating; and prepared summary memo of evaluation and pricing.





# 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 #: 847708  
Invoice Date: 03/08/2019  
Project: EGMAU19001  
Project Name: 2019 General Services

For Services Rendered through: 2/24/2019

February Engineer's Report; prepared for and attended February Municipal Authority meeting; and researched potential Sewer Ordinance revisions based on recent sewer lateral plan reviews, and emailed recommendations to the Township.

Phase : \*\*\*\* -- Professional Services

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

|               |        |
|---------------|--------|
| Labor :       | 805.25 |
| Expense :     | 0.00   |
| Phase Total : | 805.25 |

Amount Due This Invoice

\$805.25

|                    |           |
|--------------------|-----------|
| Fee :              | 27,000.00 |
| Prior Billings :   | 722.00    |
| Current Billings : | 805.25    |
| Total Billings :   | 1,527.25  |

OK  
*[Handwritten signature]*

Phase : \*\*\*\* -- Professional Services

Labor

| Class                  | Hours/<br>Units | Rate   | Amount        |
|------------------------|-----------------|--------|---------------|
| Authority Engineer     | 5.25            | 127.00 | 666.75        |
| Associate Professional | 1.25            | 94.00  | 117.50        |
| Engineering Technician | 0.25            | 84.00  | 21.00         |
| <b>Labor Total:</b>    | <b>6.75</b>     |        | <b>805.25</b> |

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

|           |          |
|-----------|----------|
| Labor :   | \$805.25 |
| Expense : | \$0.00   |

Total Project : EGMAU19001 -- 2019 General Services

|           |          |
|-----------|----------|
| Labor :   | \$805.25 |
| Expense : | \$0.00   |

East Goshen Municipal Authority  
EGMAU19001 Invoice Summary  
Invoice Date 3/8/2019

|                               |                       |              |           |
|-------------------------------|-----------------------|--------------|-----------|
| <b>Project:</b>               | EGMAU19001            |              |           |
| <b>Pennoni Job No.:</b>       | 2019 General Services |              |           |
| <b>Invoice No:</b>            | <b>847708</b>         |              |           |
| <b>Invoice Period:</b>        | 1/28/2019             | to           | 2/24/2019 |
| <b>Initial Authorization:</b> | \$ 27,000.00          | <b>Date:</b> | 3/8/2019  |
| <b>Contract Amount:</b>       | \$ 27,000.00          |              |           |
| <b>Previously Invoiced:</b>   | \$ 722.00             |              |           |
| <b>Current Invoice:</b>       | \$ 805.25             |              |           |
| <b>Invoiced to Date (\$):</b> | \$ 1,527.25           |              |           |
| <b>Invoiced to Date (%):</b>  | 6%                    |              |           |
| <b>Remaining Budget (\$):</b> | \$ 25,472.75          |              |           |
| <b>Remaining Budget (%):</b>  | 94%                   |              |           |

**Budget by Phase:**

|                               |                       |  |  |
|-------------------------------|-----------------------|--|--|
| <b>Phase Name:</b>            | 2019 General Services |  |  |
| <b>Phase Budget:</b>          | \$ 27,000.00          |  |  |
| <b>Previously Invoiced:</b>   | \$ 722.00             |  |  |
| <b>Current Invoice:</b>       | \$ 805.25             |  |  |
| <b>Invoiced to Date (\$):</b> | \$ 1,527.25           |  |  |
| <b>Invoiced to Date (%):</b>  | 6%                    |  |  |
| <b>Remaining Budget (\$):</b> | \$ 25,472.75          |  |  |
| <b>Remaining Budget (%):</b>  | 94%                   |  |  |

**Comments:** February Engineer's Report; prepared for and attended February Municipal Authority meeting; and researched potential Sewer Ordinance revisions based on recent sewer lateral plan reviews, and emailed recommendations to the Township.



# INVOICE

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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 # : 847709  
Invoice Date : 03/08/2019  
Project : EGMAU19002  
Project Name : 2019 I&I Support and Reports

For Services Rendered through: 2/24/2019

Finalized and submitted semi-annual I&I Report #18, and discussed portable metering approach for next 6 months with PW Director. Reviewed the first two weeks (2/8/19-2/20/19) of portable metering in Bow Tree, discussed with PW Director, and emailed findings and recommendations to the Township including further investigations upstream of the Achcom meter.

Phase : \*\*\*\* -- Professional Services

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

Labor : 2,766.50  
Expense : 0.00  
Phase Total : 2,766.50

**Amount Due This Invoice**

**\$2,766.50**

Fee : 11,000.00  
Prior Billings : 822.50  
Current Billings : 2,766.50  
Total Billings : 3,589.00

Phase : \*\*\*\* -- Professional Services

**Labor**

| Class                  | Hours/<br>Units | Rate   | Amount          |
|------------------------|-----------------|--------|-----------------|
| Authority Engineer     | 5.50            | 127.00 | 698.50          |
| Associate Professional | 22.00           | 94.00  | 2,068.00        |
| <b>Labor Total:</b>    | <b>27.50</b>    |        | <b>2,766.50</b> |

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

Labor : \$2,766.50  
Expense : \$0.00

Total Project : EGMAU19002 -- 2019 I&I Support and Reports

Labor : \$2,766.50  
Expense : \$0.00

East Goshen Municipal Authority  
EGMAU19002 Invoice Summary  
Invoice Date 3/8/2019

**Project:** EGMAU19001  
**Pennoni Job No.:** 2019 I&I Support and Reports  
**Invoice No:** 847709  
**Invoice Period:** 1/28/2019 to 2/24/2019  
**Initial Authorization:** \$ 11,000.00 **Date:** 3/8/2019  
**Contract Amount:** \$ 11,000.00  
**Previously Invoiced:** \$ 822.50  
**Current Invoice:** \$ 2,766.50  
**Invoiced to Date (\$):** \$ 3,589.00  
**Invoiced to Date (%):** 33%  
**Remaining Budget (\$):** \$ 7,411.00  
**Remaining Budget (%):** 67%

**Budget by Phase:**

**Phase Name:** 2019 I&I Support and Reports  
**Phase Budget:** \$ 11,000.00  
**Previously Invoiced:** \$ 822.50  
**Current Invoice:** \$ 2,766.50  
**Invoiced to Date (\$):** \$ 3,589.00  
**Invoiced to Date (%):** 33%  
**Remaining Budget (\$):** \$ 7,411.00  
**Remaining Budget (%):** 67%

**Comments:** Finalized and submitted semi-annual I&I Report #18, and discussed portable metering approach for next 6 months with PW Director. Reviewed the first two weeks (2/8/19-2/20/19) of portable metering in Bow Tree, discussed with PW Director, and emailed findings and recommendations to the Township including further investigations upstream of the Achcom meter.



# INVOICE

Newark, DE  
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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 # : 847710  
Invoice Date : 03/08/2019  
Project : EGMAU19003  
Project Name : 2018 Chapter 94 Reports

For Services Rendered through: 2/24/2019

Finalized and submitted the Westtown Service Area Chapter 94 Report to East Goshen Township and Westtown Township Continued data analysis and preparation of Ridley Creek STP and West Goshen Service Area Chapter 94 Reports.

Phase : \*\*\*\* -- Professional Services

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

|               |          |
|---------------|----------|
| Labor :       | 2,483.25 |
| Expense :     | 0.00     |
| Phase Total : | 2,483.25 |

Amount Due This Invoice

\$2,483.25

|                    |           |
|--------------------|-----------|
| Fee :              | 11,000.00 |
| Prior Billings :   | 3,625.50  |
| Current Billings : | 2,483.25  |
| Total Billings :   | 6,108.75  |

OK  
*Jan*

Phase : \*\*\*\* -- Professional Services

Labor

| Class                  | Hours/<br>Units | Rate   | Amount          |
|------------------------|-----------------|--------|-----------------|
| Authority Engineer     | 2.00            | 127.00 | 254.00          |
| Senior Professional    | 0.75            | 121.00 | 90.75           |
| Associate Professional | 22.75           | 94.00  | 2,138.50        |
| <b>Labor Total:</b>    | <b>25.50</b>    |        | <b>2,483.25</b> |

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

|           |            |
|-----------|------------|
| Labor :   | \$2,483.25 |
| Expense : | \$0.00     |

Total Project : EGMAU19003 -- 2018 Chapter 94 Reports

|           |            |
|-----------|------------|
| Labor :   | \$2,483.25 |
| Expense : | \$0.00     |

East Goshen Municipal Authority  
EGMAU19003 Invoice Summary  
Invoice Date 3/8/2019

|                               |                         |              |           |
|-------------------------------|-------------------------|--------------|-----------|
| <b>Project:</b>               | EGMAU19001              |              |           |
| <b>Pennoni Job No.:</b>       | 2019 Chapter 94 Reports |              |           |
| <b>Invoice No:</b>            | <b>847710</b>           |              |           |
| <b>Invoice Period:</b>        | 1/28/2019               | to           | 2/24/2019 |
| <b>Initial Authorization:</b> | \$ 11,000.00            | <b>Date:</b> | 3/8/2019  |
| <b>Contract Amount:</b>       | \$ 11,000.00            |              |           |
| <b>Previously Invoiced:</b>   | \$ 3,625.50             |              |           |
| <b>Current Invoice:</b>       | \$ 2,483.25             |              |           |
| <b>Invoiced to Date (\$):</b> | \$ 6,108.75             |              |           |
| <b>Invoiced to Date (%):</b>  | 56%                     |              |           |
| <b>Remaining Budget (\$):</b> | \$ 4,891.25             |              |           |
| <b>Remaining Budget (%):</b>  | 44%                     |              |           |

**Budget by Phase:**

|                               |                         |  |  |
|-------------------------------|-------------------------|--|--|
| <b>Phase Name:</b>            | 2019 Chapter 94 Reports |  |  |
| <b>Phase Budget:</b>          | \$ 11,000.00            |  |  |
| <b>Previously Invoiced:</b>   | \$ 3,625.50             |  |  |
| <b>Current Invoice:</b>       | \$ 2,483.25             |  |  |
| <b>Invoiced to Date (\$):</b> | \$ 6,108.75             |  |  |
| <b>Invoiced to Date (%):</b>  | 56%                     |  |  |
| <b>Remaining Budget (\$):</b> | \$ 4,891.25             |  |  |
| <b>Remaining Budget (%):</b>  | 44%                     |  |  |

**Comments:** Finalized and submitted the Westtown Service Area Chapter 94 Report to East Goshen Township and Westtown Township Continued data analysis and preparation of Ridley Creek STP and West Goshen Service Area Chapter 94 Reports.




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  
02/12/2019  
Client No: 6604M

| Previous Balance                    | Fees   | Expenses | Payments | Balance         |
|-------------------------------------|--------|----------|----------|-----------------|
| 6604-001 General Authority Services |        |          |          |                 |
| 440.00                              | 620.00 | 0.00     | -440.00  | <u>\$620.00</u> |

OK TO  
PAY  


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.





Gawthrop Greenwood, PC  
Attorneys at Law

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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  
02/12/2019  
Client No: 6604-001M  
Invoice No. 204628

General Authority Services

Fees

|            |  | Hours       |               |
|------------|--|-------------|---------------|
| 01/02/2019 |  |             |               |
| JKW        | Review file; Email to J Altshul; Review reply and contract documents; Review Notice of Deficiencies for Tallmadge Drive, | 1.20        |               |
| PMM        | Email to J Altshul regarding Tallmadge Drive.  | 0.20        |               |
| 01/03/2019 |  |             |               |
| PMM        | Emails (2) from E Jensen and R Weaver regarding notice of deficiencies for Tallmadge Drive.                              | 0.40        |               |
| 01/14/2019 |  |             |               |
| PMM        | Review and analyze meeting packet in preparation for meeting; Attend Authority meeting.                                  | 1.30        |               |
|            | For Current Services Rendered  | <u>3.10</u> | <u>620.00</u> |

Recapitulation

| <u>Timekeeper</u>  | <u>Hours</u> | <u>Hourly Rate</u> | <u>Total</u> |
|--------------------|--------------|--------------------|--------------|
| Jessica K. Wiesak  | 1.20         | \$200.00           | \$240.00     |
| Patrick M. McKenna | 1.90         | 200.00             | 380.00       |

|                       |          |
|-----------------------|----------|
| Previous Balance      | \$440.00 |
| Total Current Charges | 620.00   |

|            |             |                 |
|------------|-------------|-----------------|
| 01/18/2019 | Payment     | -440.00         |
|            | Balance Due | <u>\$620.00</u> |

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 February Financial Report  
Date: March 7, 2019

---

In February, the Municipal Authority recorded \$37,581 in revenues (including a \$34,588 transfer from Sewer Operating for, among other expenses, Tallmadge Drive and the Barkway Muffin Monster engineering, and a \$2,161 transfer from Sewer Capital, for the Hershey's Mill P/S generator engineering) and \$36,749 in expenses, for a positive variance of \$832. As of February 28<sup>th</sup>, the fund balance was \$27,156.

A complete list of YTD MA revenues and expenses is attached.

| Account #  | Description                     | Per  | Src | Debits    | Credits   | Date      | Name                           | Description   | Description |
|------------|---------------------------------|------|-----|-----------|-----------|-----------|--------------------------------|---|-------------|
| 07341-1000 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07341-1000 | INTEREST EARNINGS               | 1901 | JE  | 15.00     | -         | 1/4/2019  | REIMBURSE S/R FOR DEC.2018     | BANK FEES   |             |
| 07341-1000 | INTEREST EARNINGS               | 1901 | JE  | -         | 1.06      | 2/4/2019  | INTEREST EARNED JANUARY 2019   |   | 7100.1035   |
| 07341-1000 | INTEREST EARNINGS               | 1902 | JE  | 15.00     | -         | 2/4/2019  | REIMBURSE S/R FOR JANUARY 2019 | BANK FEES   |             |
| 07341-1000 | INTEREST EARNINGS               | 1902 | JE  | -         | 0.66      | 3/4/2019  | INTEREST EARNED FEB.2019       |   | 7100.1035   |
| 07364-1130 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1901 | CR  | -         | 423.00    | 1/30/2019 | STOFFLET, MICHAEL              |   |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1902 | CR  | -         | 423.00    | 2/11/2019 | JACOBS, ROBERT & CHERYL        |   |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1902 | CR  | -         | 423.00    | 2/19/2019 | GEORGE SMITH & CHRISTINA CONLE |   |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1902 | JE  | 141.12    | -         | 2/1/2019  | ANNUAL PINE ROCK - INTEREST    | PMT - STOFFLET  |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1902 | JE  | 141.12    | -         | 2/11/2019 | ANNUAL PINE ROCK INTEREST PMT  | JACOBS  |             |
| 07364-1130 | CONNECTION FEES - SEWER         | 1902 | JE  | 141.12    | -         | 2/19/2019 | ANNUAL PINE ROCK INSTALLMENT   | RC210   |             |
| 07380-1000 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07380-1000 | MISCELLANEOUS REVENUE           | 1902 | JE  | -         | 141.12    | 2/1/2019  | ANNUAL PINE ROCK - INTEREST    | PMT - STOFFLET  |             |
| 07380-1000 | MISCELLANEOUS REVENUE           | 1902 | JE  | -         | 141.12    | 2/11/2019 | ANNUAL PINE ROCK INTEREST PMT  | JACOBS  |             |
| 07380-1000 | MISCELLANEOUS REVENUE           | 1902 | JE  | -         | 141.12    | 2/19/2019 | ANNUAL PINE ROCK INSTALLMENT   | RC210   |             |
| 07380-1000 | MISCELLANEOUS REVENUE           | 1902 | RE  | -         | 1.00      | 2/19/2019 | SALE OF GENERATOR TO BEALE TWP | MISCELLANEOUS REVENUE   |             |
| 07392-0500 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07392-0500 | TRANSFER FROM SEWER OPERATING   | 1901 | JE  | -         | 57,399.61 | 1/15/2019 | XFER FR: SEWER TO MA 1/15/19   |   |             |
| 07392-0500 | TRANSFER FROM SEWER OPERATING   | 1902 | JE  | -         | 34,587.60 | 2/15/2019 | XFER FROM SEWER 05 TO MA 07    |   |             |
| 07392-0900 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07392-0900 | TRANSFER FROM SEWER CAP RESERVE | 1901 | JE  | -         | 12,132.22 | 1/15/2019 | XFER FROM SEWER SINKING TO MA  |   | 1/15/2019   |
| 07392-0900 | TRANSFER FROM SEWER CAP RESERVE | 1902 | JE  | -         | 2,161.00  | 2/15/2019 | XFER FROM SEWER CAPITAL 09 TO  | MA 07   |             |
| 07424-3000 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07424-3000 | MISCELLANEOUS EXPENSE           | 1901 | CD  | 8.00      | -         | 1/15/2019 | PMMA                           | PA MUNICIPAL AUTH.- PROUD HISTORY   | - BRIGHT F  |
| 07424-3000 | MISCELLANEOUS EXPENSE           | 1902 | CD  | 8.00      | -         | 2/14/2019 | YAHRAES, JOHN E.               | REIMBURSEMENT - PROUD HISTORY.."  | PUBLICATI   |
| 07424-3000 | MISCELLANEOUS EXPENSE           | 1902 | CD  | (8.00)    | -         | 2/14/2019 | YAHRAES, JOHN E.               | VOID CK. 3148   |             |
| 07424-3130 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07424-3130 | ENGINEERING SERVICES            | 1901 | CD  | 4,864.00  | -         | 1/15/2019 | PENNONI ASSOCIATES INC.        | SERV. THRU 12/30/18 2018 I&I SUPPT.                                       |             |
| 07424-3130 | ENGINEERING SERVICES            | 1902 | CD  | 5,170.00  | -         | 2/15/2019 | PENNONI ASSOCIATES INC.        | SERVICE THRU 1/27/19 CHAP.94  |             |
| 07424-3140 | LEGAL SERVICES                  | 1901 | CD  | 440.00    | -         | 1/15/2019 | GAWTHROP GREENWOOD & HALSTED   | LEGAL SERV. 12/7-12/28/18 GEN.AUTH.                                       |             |
| 07424-3140 | LEGAL SERVICES                  | 1902 | CD  | 620.00    | -         | 2/15/2019 | GAWTHROP GREENWOOD & HALSTED   | LEGAL SERVICE 1/2-1/14/19 GEN.AUTH  |             |
| 07424-7440 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07424-7440 | R.C. CAPITAL-STP                | 1901 | CD  | 11,830.72 | -         | 1/15/2019 | JWC ENVIRONMENTAL              | SCREEN REPLACEMENT  |             |
| 07426-1000 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07426-1000 | HERSHEY MILL STATION - ENGINEER | 1901 | CD  | 301.50    | -         | 1/15/2019 | PENNONI ASSOCIATES INC.        | SERV. THRU 12/30/18 HERSHEY MILL  | GENERATC    |
| 07426-1000 | HERSHEY MILL STATION - ENGINEER | 1902 | CD  | 2,161.00  | -         | 2/15/2019 | PENNONI ASSOCIATES INC.        | SERVICE THRU: 1/27/19 H.M.GENERATOR                                       |             |
| 07426-3000 | TALLMADGE DRIVE                 | 1901 | CD  | 42,431.40 | -         | 1/15/2019 | IRON EAGLE EXCAVATING INC.     | EXCAVATING - TALLMADGE DR. SEWER  | REPLACEM    |
| 07426-3000 | TALLMADGE DRIVE                 | 1901 | CD  | 9,082.00  | -         | 1/15/2019 | PENNONI ASSOCIATES INC.        | SERV. THRU 12/30/18 TALLMADGE DR.   |             |
| 07426-3000 | TALLMADGE DRIVE                 | 1902 | CD  | 4,678.25  | -         | 2/15/2019 | PENNONI ASSOCIATES INC.        | SERVICE THRU 1/27/19 TALLMADGE  |             |
| 07426-3000 | TALLMADGE DRIVE                 | 1902 | CD  | 21,326.40 | -         | 2/15/2019 | IRON EAGLE EXCAVATING INC.     | SANITARY SEWER BYPASS PUMPING & FLC CONTROL, SEWER LATERAL & GRAVITY PIPE |             |
| 07429-1501 | BEGINNING BALANCE               |      |     |           |           |           |                                |   |             |
| 07429-1501 | BARKWAY PUMP STATION CAPITAL    | 1901 | CD  | 582.21    | -         | 1/15/2019 | PENNONI ASSOCIATES INC.        | SERVICE THRU 12/30/18 BARKWAY PS MN                                       |             |
| 07429-1501 | BARKWAY PUMP STATION CAPITAL    | 1902 | CD  | 2,793.45  | -         | 2/15/2019 | PENNONI ASSOCIATES INC.        | SERVICE THRU 1/27/19 BARKWAY MUF.MO                                       |             |

EAST GOSHEN TOWNSHIP  
Other Funds  
February 2019  
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   |
|-------------------------------------|------------|----------------|--------------|-------------------|-------------------|--------------|------------------|------------------|
| <b>REVENUE</b>                      |            |                |              |                   |                   |              |                  |                  |
| INTEREST EARNINGS                   | 07341 1000 |                |              | (28.28)           | (28.28)           |              | (14.34)          | (14.34)          |
| CAPITAL RESERVE-INTEREST            | 07341 1010 |                |              |                   |                   |              |                  |                  |
| INTEREST EARNED - CONSTRUCTION      | 07341 1020 |                |              |                   |                   |              |                  |                  |
| DCED GRANT                          | 07354 0400 | 32,307         |              |                   |                   |              |                  |                  |
| C.C. TAPPING FEES                   | 07364 1100 |                |              |                   |                   |              |                  |                  |
| R.C.TAPPING FEES                    | 07364 1110 |                |              |                   |                   |              |                  |                  |
| M.C. LOAN PAYMENTS                  | 07364 1120 |                |              |                   |                   |              |                  |                  |
| CONNECTION FEES - SEWER             | 07364 1130 |                |              | 845.64            | 845.64            |              | 422.64           | 422.64           |
| MISCELLANEOUS REVENUE               | 07380 1000 |                |              | 424.36            | 424.36            |              | 424.36           | 424.36           |
| TRANSFER FROM GENERAL ACCT          | 07392 0100 |                |              |                   |                   |              |                  |                  |
| TRANSFER FROM SEWER OPERATING       | 07392 0500 | 311,118        |              | 91,987.21         | 91,987.21         |              | 34,587.60        | 34,587.60        |
| TRANSFER FROM SEWER CAP RESV        | 07392 0501 | 357,000        |              |                   |                   |              |                  |                  |
| TRANSFER-ANNUAL CAP.RESERVE         | 07392 0510 |                |              |                   |                   |              |                  |                  |
| GRANT REVENUE                       | 07392 0800 |                |              |                   |                   |              |                  |                  |
| LOAN PROCEEDS - SEWER PROJECT       | 07392 0804 |                |              |                   |                   |              |                  |                  |
| TRANSFER FROM SEWER CAP RESERVE     | 07392 0900 |                |              | 14,293.22         | 14,293.22         |              | 2,161.00         | 2,161.00         |
| <b>TOTAL REVENUE</b>                |            | <b>700,425</b> |              | <b>107,522.15</b> | <b>107,522.15</b> |              | <b>37,581.26</b> | <b>37,581.26</b> |
| <b>EXPENSES</b>                     |            |                |              |                   |                   |              |                  |                  |
| ADMINISTRATIVE WAGES                | 07424 1400 | 32,000         |              |                   |                   |              |                  |                  |
| R.C. LOAN ISSUANCE COSTS            | 07424 1500 |                |              |                   |                   |              |                  |                  |
| MISCELLANEOUS EXPENSE               | 07424 3000 | 2,262          | 377          | 8.00              | 369.00            | 188          |                  | 188.00           |
| MUNIC.AUTH.-AUDITING                | 07424 3110 | 9,663          |              |                   |                   |              |                  |                  |
| ENGINEERING SERVICES                | 07424 3130 | 70,000         | 11,666       | 10,034.00         | 1,632.00          | 5,833        | 5,170.00         | 663.00           |
| LEGAL SERVICES                      | 07424 3140 | 8,000          | 1,340        | 1,060.00          | 280.00            | 670          | 620.00           | 50.00            |
| 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 |                |              | 11,830.72         | (11,830.72)       |              |                  |                  |
| R.C. CAPITAL - COLLECTION           | 07424 7450 |                |              |                   |                   |              |                  |                  |
| R.C.-CAP. PROJ.-ENGINEER            | 07424 7451 |                |              |                   |                   |              |                  |                  |
| CAP.REPLACEMENT R.C.                | 07424 7490 |                |              |                   |                   |              |                  |                  |
| CAPITAL REPLACEMENT ASHBRIDGE       | 07424 7491 |                |              |                   |                   |              |                  |                  |
| HERSHEY MILL STATION - ENGINEER     | 07426 1000 |                |              | 2,462.50          | (2,462.50)        |              | 2,161.00         | (2,161.00)       |
| HERSHEY MILL STATION - CONSTRUCTION | 07426 2000 |                |              |                   |                   |              |                  |                  |
| TALLMADGE DRIVE                     | 07426 3000 |                |              | 77,518.05         | (77,518.05)       |              | 26,004.65        | (26,004.65)      |

EAST GOSHEN TOWNSHIP  
Other Funds  
February 2019  
Municipal Authority

| Account Title                       | Acct #     | Annual<br>Budget | Y-T-D<br>Budget | Y-T-D<br>Actual   | Y-T-D<br>Variance  | M-T-D<br>Budget | M-T-D<br>Actual  | M-T-D<br>Variance  |
|-------------------------------------|------------|------------------|-----------------|-------------------|--------------------|-----------------|------------------|--------------------|
| RESERVOIR PUMP STATION - ENGINEER   | 07428 1000 |                  |                 |                   |                    |                 |                  |                    |
| RESERVOIR PUMP STATION CONSTRUCTION | 07428 2000 |                  |                 |                   |                    |                 |                  |                    |
| RELINING                            | 07429 1500 | 130,000          |                 |                   |                    |                 |                  |                    |
| BARKWAY PUMP STATION CAPITAL        | 07429 1501 | 67,000           |                 | 3,375.66          | (3,375.66)         |                 | 2,793.45         | (2,793.45)         |
| HERSHEYS MILL PUMP STATION CAPITAL  | 07429 1503 | 125,000          |                 |                   |                    |                 |                  |                    |
| HUNT CO PUMP STATION CAPITAL        | 07429 1504 | 87,000           |                 |                   |                    |                 |                  |                    |
| RCSTP CAPITAL                       | 07429 1505 | 169,500          |                 |                   |                    |                 |                  |                    |
| ASBESTOS CONCRETE ENGINEERING       | 07429 3130 |                  |                 |                   |                    |                 |                  |                    |
| DIVERSION PROJ. - LEGAL             | 07429 3166 |                  |                 |                   |                    |                 |                  |                    |
| WEST GOSHEN CAPITAL                 | 07429 6100 |                  |                 |                   |                    |                 |                  |                    |
| M.C.-DVRFA-DEBT SERVICE             | 07471 1000 |                  |                 |                   |                    |                 |                  |                    |
| M.A.-R.C. DEBT SERVICE              | 07471 1010 |                  |                 |                   |                    |                 |                  |                    |
| DVRFA PUMPING STATIONS - PRINCIPAL  | 07471 2000 |                  |                 |                   |                    |                 |                  |                    |
| M.C.-DVRFA-INTEREST PAYMN           | 07472 1000 |                  |                 |                   |                    |                 |                  |                    |
| M.A.-R.C. INTEREST                  | 07472 1010 |                  |                 |                   |                    |                 |                  |                    |
| DVRFA 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 |                  |                 |                   |                    |                 |                  |                    |
| <b>TOTAL EXPENSES</b>               |            | <b>700,425</b>   | <b>13,383</b>   | <b>106,288.93</b> | <b>(92,905.93)</b> | <b>6,691</b>    | <b>36,749.10</b> | <b>(30,058.10)</b> |
| <b>NET RESULT FROM OPERATIONS</b>   |            |                  | <b>(13,383)</b> | <b>1,233.22</b>   | <b>14,616.22</b>   | <b>(6,691)</b>  | <b>832.16</b>    | <b>7,523.16</b>    |

# Memo

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To: Municipal Authority  
From: Jon Altshul  
Re: West Goshen STP Update  
Date: February 26, 2019

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Attached please find an updated financial worksheet that was provided by HRG at our meeting with West Goshen on Tuesday, February 26. From a financial standpoint, East Goshen's total revised estimated cost is \$4,456,447, or about \$70,000 less than the last estimate in September, and about \$25,000 less than the bond proceeds will provide for, not including any accrued interest. Mark and I can give you a verbal update on the projects at our March meeting.

| WEST GOSHEN SEWER AUTHORITY PROJECT<br>UPDATED FEBRUARY 25, 2019                         |                              |  |                     |                  |                       |                          |                             |                        |  |
|--|------------------------------|--|---------------------|------------------|-----------------------|--------------------------|-----------------------------|------------------------|--|
|  | Total Estimated Project Cost | Estimated Cost Based on Applicable Scope to Municipalities | Total Spent to Date | Percent Complete | Westtown % Allocation | East Goshen % Allocation | West Whiteland % Allocation | Thornbury % Allocation |  |
| Contract 16-2: WWTP Emergency Generator Replacement                                      | \$ 727,255.16                | \$ 727,255.16  | \$ 727,255.16       | 100%             | \$ 64,238.45          | \$ 121,233.44            | \$ 99,393.96                | \$ 1,151.97            |  |
| Contracts 17-1 & 17-2: Headworks Improvement Project                                     | \$ 2,964,529.21              | \$ 2,964,529.21  | \$ 2,773,291.64     | 100%             | \$ 261,856.87         | \$ 494,187.02            | \$ 405,162.21               | \$ 4,695.81            |  |
| Contracts 17-3, 17-6, & 17-7 Anaerobic Digester Replacement Project (a)                  | \$ 6,155,251.01              | \$ 6,155,251.01  | \$ 4,162,132.88     | 75%              | \$ 543,693.32         | \$ 1,026,080.34          | \$ 841,298.16               | \$ 9,749.92            |  |
| Contract 17-4: Pump Station Phase I Improvements   | \$ 778,217.40                | \$   | \$ 754,248.61       | 100%             |                       |                          |                             |                        |  |
| Washington Street PS (PS 12)   |                              | \$ 203,148.00  |                     | 100%             |                       |                          |                             |                        |  |
| Westtown Way PS (PS 13)  |                              | \$ 217,042.10  |                     | 100%             | \$ 19,171.33          | \$ 118,928.22            | \$ 27,764.24                |                        |  |
| Taylor Run PS (PS 11)  |                              | \$ 43,643.60   |                     | 100%             |                       |                          | \$ 5,964.77                 |                        |  |
| Contract 17-5: 2017 Sanitary Sewer System Repairs (a)                                    | \$ 1,607,325.44              | \$ 160,732.54  | \$ 1,276,914.48     | 98%              | \$ 3,404.81           | \$ 21,123.45             | \$ 51,987.07                | \$ 254.60              |  |
| Enhanced Chemical Addition Project (b)   | \$ 559,448.91                | \$ 268,448.91  | \$ 555,163.19       | 100%             | \$ 23,712.09          | \$ 44,750.43             | \$ 36,688.91                | \$ 425.22              |  |
| WWTP Phase II Improvements (a)   | \$ 7,868,700.00              | \$ 7,868,700.00  |                     |                  | \$ 695,042.27         | \$ 1,311,712.29          | \$ 1,075,415.23             | \$ 12,464.02           |  |
| Pump Station Phase II Improvements (a)   | \$ 4,967,690.00              | \$ 2,008,000.00  |                     |                  |                       |                          |                             |                        |  |
| Westtown Way PS  |                              | \$ 1,210,000.00  |                     |                  | \$ 176,660.00         | \$ 1,095,900.00          |                             |                        |  |
| Taylor Run PS  |                              | \$ 74,922.50   |                     |                  | \$ 6,617.90           | \$ 12,489.58             | \$ 10,239.66                | \$ 118.68              |  |
| Misc. Capital Costs, System Integration, Engineering, Legal, and Administrative Fees (b) | \$ 1,260,000.00              | \$ 1,260,000.00  | \$ 289,873.75       | 21%              | \$ 111,295.80         | \$ 210,042.00            | \$ 172,204.20               | \$ 1,995.84            |  |
| Capital Costs (Non-Bond Related)   | \$ 27,037,262.13             | \$ 23,153,673.03   | \$ 10,518,873.51    |                  | \$ 1,905,692.84       | \$ 4,456,446.77          | \$ 2,891,429.10             | \$ 30,856.07           |  |
| <b>TOTALS</b>  |                              |  |                     |                  |                       |                          |                             |                        |  |

1. Project Costs include Owner Purchased Items, Contracts 17-1 and 17-2, Contract Administration, & Approved Changes to date.
2. Assumes that 10% of the Project cost can be attributed to Municipal Partners
3. Assumes that 50% of the Project cost can be attributed to Municipal Partners
4. Conceptual Estimate
5. Does Not Include Grant Reimbursements



February 14, 2019

EGMAU18002

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

**RE: Semi-Annual Sewer System Status Report #18**  
**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 monitoring period and those which will be taken in the subsequent monitoring period. The term "Corrective Action" has been replaced with "Action".

#### **EXECUTIVE SUMMARY**

Permanent meter data from 2018 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, and I&I continues within the Ridley Creek Service Area. A portable metering investigation was not conducted in 2018.

Based on the permanent meter data, the average flow in the Ridley Creek Service Area in 2018 increased by approximately 91,000 gpd (22%) compared to the average of 2014 to 2017. In the Chester Creek Service Area, the average flow from the East Goshen portion of the Chester Creek Service in 2018 increased by approximately 47,000 gpd (6%) compared to the average flow from 2014 to 2016, and the average 2018 flow increased by approximately 96,000 gpd (14%) compared to the average flow of 2017. The average flow from the East Goshen portion of the Chester Creek Service Area in 2017 was significantly lower than the average flow from 2014 to 2016, possibly due to I&I work that year. The total annual rainfall was 84% greater in 2018 compared to 2017.

In the next six months, the Township should focus on analysis of permanent metering in the Chester Creek Service Area and install portable meters in the Ridley Creek Service Area. Visual observation of flows within manholes during overnight hours should also continue with follow-up televising as needed. In January 2019, three portable meters were installed within the Bow Tree Development. These meters should be monitored for approximately 3 months and then be strategically relocated to identify I&I sources.

**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.

**2018:**

This report analyzes permanent meter data for 2018. There were no portable meters installed or active in the subbasins during this time period.

**Ridley Creek Service Area**

- **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 the Chapter 94 report between 2014 to 2018 (subject to footnote 3):

| <b>Hydraulic Loading<sup>(1)</sup></b> |                      |             |             |             |                      |
|--|----------------------|-------------|-------------|-------------|----------------------|
| <b>(MGD)</b>                           |                      |             |             |             |                      |
| <b>Month</b>                           | <b>2014</b>          | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b>          |
| January                                | 0.416                | 0.448       | 0.466       | 0.435       | 0.429                |
| February                               | 0.447                | 0.433       | 0.602       | 0.404       | 0.445 <sup>(3)</sup> |
| March                                  | 0.467                | 0.538       | 0.498       | 0.443       | 0.474 <sup>(3)</sup> |
| April                                  | 0.482                | 0.439       | 0.437       | 0.470       | 0.488                |
| May                                    | 0.489                | 0.397       | 0.451       | 0.442       | 0.486                |
| June                                   | 0.406                | 0.386       | 0.273       | 0.404       | 0.450                |
| July                                   | 0.367 <sup>(2)</sup> | 0.372       | 0.248       | 0.372       | 0.431                |
| August                                 | 0.330 <sup>(2)</sup> | 0.329       | 0.307       | 0.355       | 0.490                |
| September                              | 0.346                | 0.335       | 0.334       | 0.385       | 0.591                |
| October                                | 0.345                | 0.372       | 0.354       | 0.452       | 0.527                |
| November                               | 0.372                | 0.386       | 0.387       | 0.399       | 0.590 <sup>(3)</sup> |
| December                               | 0.437                | 0.457       | 0.443       | 0.415       | 0.583 <sup>(3)</sup> |
| <b>Annual Average (AA)</b>             | 0.409                | 0.408       | 0.400       | 0.415       | <b>0.499</b>         |
| <b>Total Rainfall (inches)</b>         | 46.04                | 43.98       | 41.80       | 41.20       | <b>75.72</b>         |

<sup>(1)</sup> 2014 through 2018 do not include recycle flows unless otherwise noted.

- (2) The field influent meter (prior to recycle) malfunctioned from July 16, 2014 through August 3, 2014. Flows for this period are from the RCSTP influent flow meter which includes recycle flows.
- (3) The field influent meter (prior to recycle) was offline for February and March 2018 as well as November and December 2018. The original flows for this period are from the RCSTP influent flow meter which includes recycle flows. We removed the recycled flow by assuming 10% of the total flow represents the recycled flow and subtracted it from the Chapter 94 total flow in this table.

As reflected in the table above the annual average flow was approximately 22% greater in 2018 than the previous four years. The total rainfall was approximately 84% greater in 2018 than in 2017. August (10.85 inches), September (9.51 inches) and November (12.4 inches) had the greatest total monthly precipitation in 2018. This correlates to a significant increase in the daily flow towards the end of 2018. Therefore, it is apparent that the increase flow is caused by I&I within the Ridley Creek Service Area.

In January 2019, the Public Works Department visually inspected the flows in the manholes upstream of the previous Line Road metering manhole and determined there was no significant I&I upstream of that manhole. These observations upstream of the previous Line Road metering manhole are consistent with metering there in 2014 to 2016.

In 2015, manholes R-213 and R-022 were metered with portable meters. It was determined that both of these locations experienced I&I upstream. These locations in particular should be investigated in the next six months to determine if I&I is still present upstream.

The installation of a data logger at the Ridley Creek Interceptor in Manhole R-001 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

- Permanent Chester Creek Service Area Meters

Flow data from the eight permanent meters throughout the Chester Creek Service Area were analyzed for 2018; 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 in 2018 was 1,106,389 gpd with the average flow from the East Goshen portion of the Chester Creek Service Area comprising 780,541 gpd (71%). 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 in 2018 averaged 325,848 gpd.

The flows in the Chester Creek Service Area in 2018 are significantly greater than the average flows in 2017. The average from the East Goshen portion of the Chester Creek Service Area in 2017 was 684,255 gpd, which is 14% lower than the average flow in 2018. The average flow from West Goshen in 2017 was 271,284 gpd, which is 20% lower than the average flow in 2018. This significant increase in the flows within the Chester Creek Service Area is mostly likely caused by

increased I&I during this period due to a total of 75.72 inches of rainfall in 2018, which is approximately 84% greater than in 2017.

We also analyzed East Goshen's sewer billing information from 2016 compared to the flow data from the permanent meters during 2018. This analysis consisted of using the sewer billing information from 2016 and determining how many billing units were located upstream of each permanent meter. This billing unit value was then multiplied by the Chapter 94 report gpd/EDU rate from 2018 to determine the expected flow upstream of the permanent meter. This expected flow was then compared to the actual flow data from the permanent meters during 2018 to determine if there was any unaccounted flow, which is most likely caused by I&I.

In previous reports we separated the Chester Creek Service Areas into four sub-areas, as seen in Figure #1, however during this period a meter was not installed between CC-3 and CC-1. Therefore, we are unable to analyze the isolated flow from CC-3 and CC-1, however we were able to separate CC-3 into CC-3A and CC-3B as shown in Figure #1. We can analyze CC-4, CC-2, CC-3A and combined flow from CC-3B and CC-1. Based on this analysis, CC-4 has minimal unaccounted flow (761 gpd), CC-3A has some unaccounted flow (22,493 gpd), the combined flow from CC-3B and CC-1 has little to no unaccounted flow, and the CC-2 continues to have a significant amount of unaccounted flow (227,335 gpd), consistent with prior years' analyses. Therefore, sub-area CC-2 is considered to have the highest amount of I&I and should continue to be the focus of investigations in the service area.

Please note that based on this limited metering analysis method there is likely I&I even within areas of little to no unaccounted flow, but it identifies the subareas with the greatest amount of unaccounted flow and associated I&I. Hourly or instantaneous metering as the permanent meter would allow for more detailed analyses.

***Next 6 Months:***

We recommend the following actions for the next six months:

- Continue to monitor permanent meters in the Chester Creek Service Area
- Repair influent meter at the Ridley Creek Treatment Plant
- Monitor three portable meters in the Bow Tree Development to locate any potential I&I. Relocate portable meters in the Ridley Creek Service Area to strategically locate potential I&I
- Install permanent meter(s) in the Ridley Creek Service Area
- Install hourly data logging capabilities at all permanent meters

**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.

***2018:***

- 10,350 linear feet of pipe was cleaned and televised within Chester Creek Service Area
- Hershey Mill Estates was televised and 12 breaks and 4 laterals defects were found. Point repairs were made.
- Public Works Department (PWD) has been inspecting manholes at night within the Chester

Creek Service Area to locate high flows and isolate them. There have been 5 sources of infiltration encountered.

- The PWD cleaned and televised the following developments: Lochwood Chase, Fairway Village, Hadleigh Development and Bittersweet Development. There were 4 sources of infiltration discovered, which have been repaired.
- A leak in the sewer lateral at the Blacksmith shop was discovered.

***Next 6 Months:***

- Continue to monitor and televise Chester Creek Service Area and Ridley Creek Service Area including visual inspections of flows in manholes during overnight (low flow) hours

**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.

***2018:***

- Replaced 100+ caps and vents
- Lateral clog and lateral repair at 1616 Margo Lane
- Replaced 14 castings and lids along Hadleigh Road and Blanford Lane
- 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 during 2017 to 2018

***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.

**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.

**2018:**

- Portable meters were not installed in 2018. Additionally, the extreme precipitation in 2018 results in inconclusive results for impacts of repairs (without extensive statistical analyses that is beyond the scope of this reporting).

**Next 6 Months:**

- Data from the permanent meters will be analyzed.

**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.

**2018:**

- 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.

**2018:**

- Submitted Semi-Annual Sewer System Status Report #17 to the Municipal Authority on March 27, 2018.

**Next 6 Months:**

- Prepare and submit Semi-Annual Sewer System Status Report #19 to the Municipal Authority by June 30, 2019.

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

Sincerely,

**PENNONI ASSOCIATES INC.**



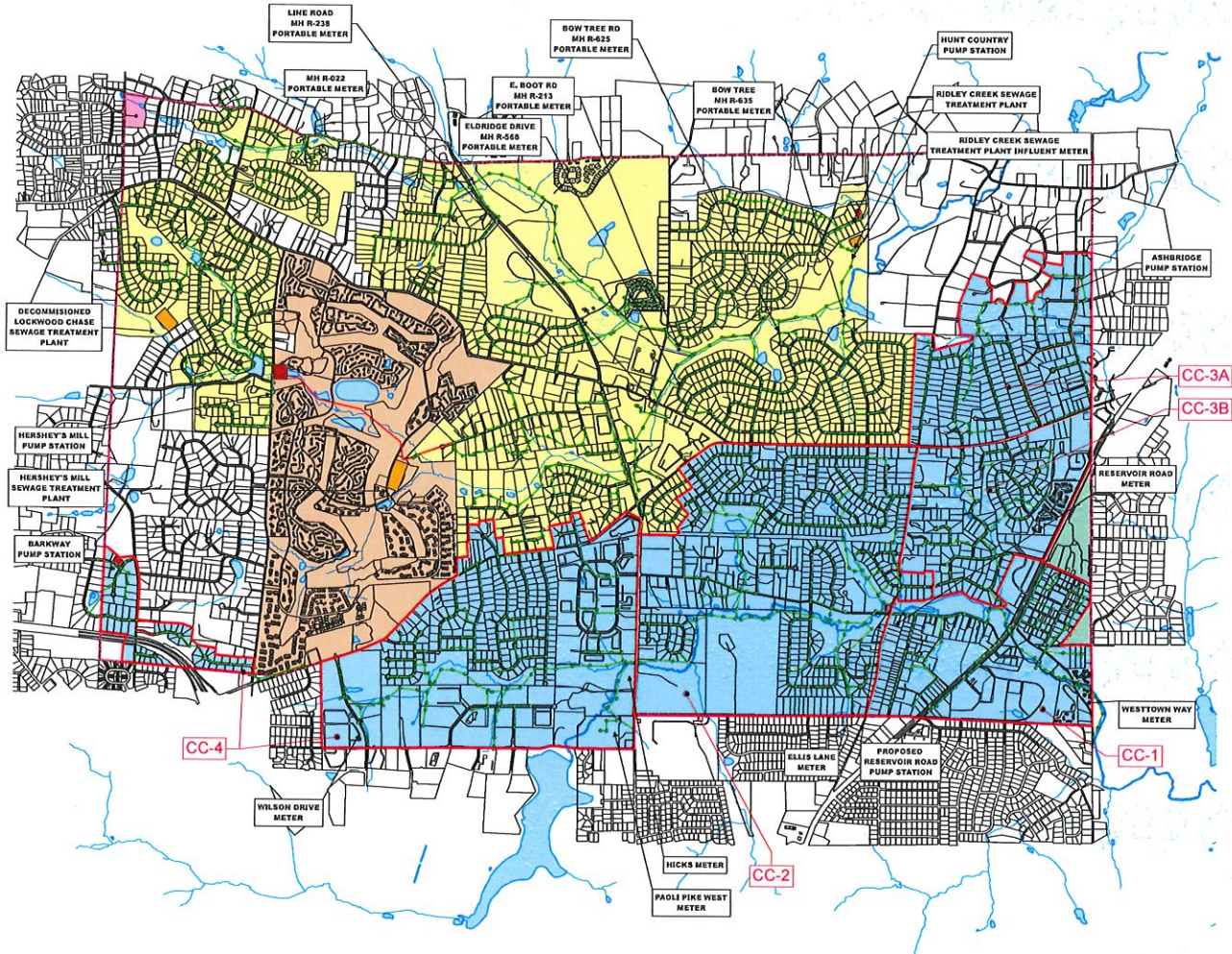
Michael J. Ellis, PE  
Authority Engineer

cc: Mark Miller, Public Works Director  
Jon Altshul, Assistant Township Manager  
East Goshen Municipal Authority

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**EAST GOSHEN  
WASTEWATER FACILITIES  
FIGURE 1**



**Legend**

- SubAreas
- PUMP STATION
- SEWAGE TREATMENT PLANT
- SANITARY SEWER
- PERMANENT METER
- PORTABLE METER (2019)
- SANITARY SEWER
- FORCEMAIN
- TOWNSHIP BOUNDARY
- Parcels
- PONDS & LAKES
- RIVERS
- EAST WHITELAND SERVICE AREA
- HERSHEY'S MILL SERVICE AREA
- RIDLEY CREEK SERVICE AREA
- WEST GOSHEN SERVICE AREA
- WESTTOWN SERVICE AREA

February 14, 2019

Scale: 0 1,000 2,000 4,000 Feet  
1 inch = 1,000 feet



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

**FYI**

March 1, 2019

Dear Property Owner:

The purpose of this letter is to inform you that East Goshen Township has received a Conditional Use application for the un addressed Hershey's Mill property at the north corner of the intersection of N. Chester Rd. and Wineberry Ln., West Chester PA 19380. Conditional Use approval for a Public Utility Facility was granted for this property in 1997, to PECO Energy Co.

PECO Energy is seeking to modify the Conditional Use approval from 1997 by adding a 10' x 16' building to the site. PECO proposes to upgrade the existing communications equipment for the facility and house it inside this new building.

The property is situated in the R-1, (Low Density Suburban Residential) Zoning District of East Goshen Township. Public Utility Facilities are permitted in the R-1 Zoning District as a Conditional Use.

Pursuant to Township policy, property owners within 1000 feet of the subject property are notified when Conditional use applications are received. **The meeting dates for this matter are listed below and subject to change without further written notice:**

**March 6, 2019 - Planning Commission (7:00 PM)**

**March 13, 2019 - Conservancy Board (7:00 PM)**

**April 3, 2019 - Planning Commission (7:00 PM)**

**April 23, 2019 - Board of Supervisors (7:00 PM – Conditional Use Hearing)**

These meetings will be held at the Township Administration Building and will be open to the public. The Application is available for review at the Township building during normal business hours. If any person who wishes to attend the hearing has a disability and/or requires an auxiliary aid, service or other accommodation to observe or participate in the proceedings, he or she should contact East Goshen Township at 610-692-7171 to discuss how those needs may be accommodated.

Sincerely,

*Mark A. Gordon*

Mark A. Gordon  
Township Zoning Officer