

**EAST GOSHEN MUNICIPAL AUTHORITY**

**January 11, 2016**

**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 Inc. Report with DMR's
4. APPROVAL OF MINUTES
  - a. December 14, 2015
5. APPROVAL OF INVOICES
  - a. Pennoni Invoice #668503      \$1,063.75
  - b. Pennoni Invoice #668504      \$16,747.75
5. LIAISON REPORTS
6. FINANCIAL REPORTS
  - a. December 2015 Report
7. OLD BUSINESS
8. GOALS
  - a. Operate the Ridley Creek Sewer Treatment Plant in compliance with NPDES Permit requirements.
  - b. Continue to implement the formal Inflow (surface water) & Infiltration (ground water), (collectively "I&I") Plan to reduce the amount of I&I into the sewer system.
  - c. Respond to capacity requests within 45 days. Develop an operation manual for Ridley Creek Sewer Treatment Plant and pump stations.
  - d. Submit topical articles of interest for the East Goshen newsletter.

e. Attend West Goshen Municipal Authority meetings to keep informed of planned capital expenditures and operation compliance.

9. NEW BUSINESS
10. CAPACITY REQUESTS
11. ANY OTHER MATTER  
Semi-Annual Sewer System Status Report #14
12. CORRESPONDENCE AND REPORTS OF INTEREST
13. PUBLIC COMMENT
14. ADJOURNMENT

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

January 8, 2016

To: Municipal Authority  
From: Mark Miller  
Re: December 2015 Monthly Report

**Meters:** We checked all meters once a week, no problems to report.  
Average Flow – 780,000  
December precipitation – 5.02

**C.C. Collection:** The pumping stations were visited on a daily basis. All stations had preventive maintenance performed by Lenni Electric. John Laidly was out to perform routine maintenance to the electronics. We replaced three back-up floats at Barkway Station.  
We televised several laterals to check for infiltration we also replaced several broken vent stacks (see picture).  
We added additional conduit at the Hershey Mill station for the larger pump cords.  
The Public Works Crew replaced three manhole castings that we found taking in inflow.

**R.C. Collection:** All pump stations were visited on a routine basis, the rail system will need to be replaced this year. I sent the info out to Seely Associates. I contacted Allied Control for the installation of meters on the Ridley Creek System. We are planning on starting the smoke testing in February.

**R.C. Plant:** Routine maintenance was performed at the plant, all buildings were cleaned from top to bottom. Floors were prepared for sealing.

**Alarms:** We responded to 6 alarms for December.

**PA One Calls:** We received 65 PA One calls for December.





Broken Lateral  
Body Shop  
RT 3 + Reservoir Rd,  
on chester creek





**MEMORANDUM**

**TO:** East Goshen Municipal Authority Board  
Rick Smith, Township Manager

**FROM:** Michael Ellis, P.E.  
Authority Engineer

**DATE:** January 7, 2016

**SUBJECT:** Engineer's Report

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**Invoices**

- Invoices with summaries are provided under separate cover.

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

- No activity since the last report.

**Reservoir Road Pump Station**

- Application packages were submitted on November 19, 2015 to PADEP for the Ridley Creek GP-5 "Utility Line Stream Crossings" and GP-8 "Temporary Road Crossings (across streams)" permits and for the Chester Creek Small Projects Joint Permit for the pump station site and Chester Creek utility crossing. We are awaiting PADEP response.
- The Township Codes Department reviewed the plans and provided a few comments that we have addressed.
- Williams-Transco and Sunoco have approved the petroleum pipeline crossings. We are awaiting a response from PPL-IEC.
- The PennDOT Highway Occupancy Permit application for force main construction along and across E. Strasburg Road and Rt. 352, including detour route plans for road closures, was submitted on December 22, 2015.
- We met with the Chester County Conservation District (CCCD) on December 22, 2015 to discuss their initial comments on the NPDES Permit application. We are editing the plans and permit application documents to address the comments, and we expect to submit the revised documents to CCCD by January 15, 2016.
- The Water Quality Management Part II Permit application will be submitted to PADEP after the plans are revised to address CCCD's comments.

- The tentative schedule follows:

	<u>Estimated Date</u>
○ Submitted PADEP GP and JP Permit applications.....	November 19, 2015
○ Submitted NPDES Permit application .....	December 7, 2015
○ Submitted PennDOT HOP application for force main ..	December 22, 2015
○ Submit revised NPDES Permit application .....	January 15, 2016
○ Submit PADEP WQM Part II Permit application.....	January 20, 2016
○ PennDOT Permit issuance .....	January 2016
○ PADEP and CCCD Permit issuances .....	March-April 2016

#### **Semi-Annual I&I Reports**

- We analyzed portable and permanent meter data and prepared Semi-Annual Sewer System Status Report #14, which was submitted on January 7, 2016.

#### **RCSTP and Pump Stations' O&M Plan**

- We are preparing an outline of proposed content for the O&M Plan that will be submitted to the Township for review the week of January 11-15, 2016.

#### **New Connections**

- We reviewed a revised grinder pump plan submission for a proposed new house on a subdivided parcel at 930 N. Chester Road.



## Monthly Operations Report: December 2015

### Executive Summary

The Ridley Creek sewage treatment plant outfall 001 achieved compliance with the NPDES discharge permit during November 2015. Discharge to Applebrook was discontinued during November. Chemical usage utilized for total phosphorus removal, pH and total alkalinity remained consistent with previous months. No mechanical or operational issues were observed during operation of sludge dewatering equipment.

### Treatment Process Operation

During November 2015, there were no exceedances of the final effluent discharge limitations for outfall 001. Additional TSS samples were collected twice per week to allow for a means to calculate a weekly average. The total phosphorus monthly average concentration of 0.28 mg/L as compared to the permitted limitation of 0.50 mg/L. Table 1 illustrates the final effluent composite sample data reported for the November 2015 eDMR. During the month, the final effluent total phosphorus concentration discharged ranged from 0.10 mg/L to 0.44 mg/L. The aluminum sulfate daily average slightly decreased to 80.9 gpd as compared to November's average of 83.2 gpd.

**Table 1**

<b>November 2015 - Final Effluent - Out Fall 001</b>											
NPDES Permit Discharge Limitations	Flow	CBOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	10	131	7	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
November 3, 2015	0.285	2.5	5.9	7	17	0.545	1.30	0.25	0.59	3	0.4771
November 5, 2015	0.282			6	14						
November 10, 2015	0.296	2.8	6.9	10	25	0.340	0.84	0.44	1.09	2	0.3010
November 12, 2015	0.324			6							
November 17, 2015	0.299	2.0		6	15	0.410		0.34		1	
November 19, 2015	0.315			5	13						
November 24, 2015	0.336	2.3	6.4	1	3	0.26	0.71	0.10	0.28	1	0.0000
November 26, 2015	0.352			5	15						
November 30, 2015	0.325			5	14						
Average	0.313	2.4	6.4	6	14	0.388	0.95	0.28	0.65	2	0.2594
Minimum	0.282	2.0	5.9	1	3	0.255	0.71	0.10	0.28	1	0.0000
Maximum	0.352	2.8	6.9	10	25	0.545	1.30	0.44	1.09	3	0.4771





Discharge to Applebrook, Outfall 002, continued to remain off line during November 2015. Table 2 illustrates the influent composite sample data reported for the November 2015

**Table 2**

<b>November 2015 - Influent Wastewater</b>											
Design Basis	Flow	BOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
Sample Date											
November 3, 2015	0.373	270	840	251	781	35.0	109	49.2	153	6.6	21
November 10, 2015	0.372	122	380	192	597	44.0	137	49.6	154	6.0	19
November 17, 2015	0.360	210	653	288	896	54.9	171	74.7	224	8.3	26
November 24, 2015	0.391	97.6	304	140.0	436	49.4	154	54.8	179	5.5	17
Average	0.374	175	544	218	678	45.8	143	57.1	177	6.6	21
Minimum	0.360	98	304	140	436	35.0	109	49.2	153	5.5	17
Maximum	0.391	270	840	288	896	54.9	171	74.7	224	8.3	26

Table 3 presents the available Outfall 001 final effluent data for the month of December 2015. During December, the presence of foam conditions on the surface of the SBRs remained consistent with the previous month with foam concentrations ranging from 50% to 80% of the area. This is attributed to decreasing water temperatures supporting conditions for growth of filamentous bacteria. Increasing the F:M ratio and decreasing MLSS concentrations is employed to assist in managing the increase in filamentous growth.

During December, there are no anticipated exceedances of the permitted limitations for Outfall 001. There was no discharge from outfall 002. Split sampling of the composite sample collected by Applied Laboratory Services (ALS) is ongoing for comparative analysis and daily results.



Table 3

December 2015 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	10	131	7	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
December 1, 2015	0.337	2.3	6.5	7	20	1.220	3.43	0.10	0.28	4	0.6021
December 4, 2015	0.345			7	20						
December 8, 2015	0.324	2.7	7.3	8	22	0.389	1.05	0.10	0.27	5	0.6990
December 9, 2015	0.313			3	8						
December 10, 2015	0.304			3	8						
December 15, 2015	0.333	2.0	5.6	2	6	0.847	2.35	0.26	0.72	270	2.4314
December 17, 2015	0.316			1	3						
December 22, 2015	0.264	2.0	4.4	5	11	0.39	0.85	0.17	0.37	1	0.0000
December 24, 2015	0.459										
December 29, 2015	0.514										
December 30, 2015	0.393										
Average	0.355	2.3	5.9	5	12	0.710	1.92	0.16	0.41	9	0.9331
Minimum	0.264	2.0	4.4	1	3	0.385	0.85	0.10	0.27	1	0.0000
Maximum	0.514	2.7	7.3	8	22	1.220	3.43	0.26	0.72	270	2.4314

The influent wastewater pollutant concentrations and loading entering the wastewater treatment facility remained within the design concentrations and loadings, with exception of the total phosphorus loading on December 22<sup>nd</sup>. Composite samples are collected at the influent doghouse manhole and influent wet well. The influent flow meter reading is collected from the influent flow meter located prior to the Screening Building, excluding the internal recycle flows.

Table 4 presents the available pollutant data for the influent wastewater collected at the doghouse manhole during December 2015.





**Table 4**

<b>December 2015 - Influent Wastewater</b>											
Design Basis	Flow	BOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
Sample Date											
December 4, 2015	0.452	162	611	1	4	45.5	172	52.4	198	7.7	29
December 8, 2015	0.368	175	660	214	807	33.3	126	57.1	175	5.9	22
December 15, 2015	0.379	315	1,188	216	815	31.2	118	48.9	154	4.9	18
December 22, 2015	0.467	159	600	54	204	38.5	145	45.6	178	22.3	84
December 29, 2015	0.672										
Average	0.468	203	765	121	457	37.1	140	51.0	176	10.2	38
Minimum	0.368	159	600	1	4	31.2	118	45.6	154	4.9	18
Maximum	0.672	315	1188	216	815	45.5	172	57.1	198	22.3	84

Sequencing batch reactors (SBRs) numbered 1, 3 and 4 were in service during November and December. Process monitoring of each SBR included ammonia as N, nitrite as N, Nitrate as N, COD, SSV, MLSS and total phosphorus. Daily analysis of the final effluent flow equalization grab sample is total phosphorus is ongoing. Sample collection and analysis of the influent wastewater collected at the influent pump station wet well is ongoing.

Addition of aluminum sulfate solution to the SBRs to assist with phosphorus removal continued. The volume of aluminum sulfate solution to the SBRs decreased to from 83.2 gpd to 80.9 gpd. Soda ash daily addition increased from 410 lbs. per day to 426 lbs. per day. Soda ash assists towards maintaining SBR pH concentrations above 7.0 standard units and assists to replenish alkalinity consumed during the nitrification process and aluminum sulfate solution addition.

SBR No. 2 remains out of service as a treatment unit. Minor repairs will be scheduled as weather conditions permit.





### **Solids Dewatering and Disposal: December 2015**

<b>Sludge Dewatering Summary</b>	
Gallons of sludge dewatered	323,417
Number of dumpsters	5

*\*twenty two (22) days of centrifuge operation*

### **Flow data:**

<b>December 2015</b>			
<b>Flow Meter Location</b>	<b>Total Volume for Month, MG</b>	<b>Average Daily Flow, gpd</b>	<b>Daily Maximum Flow, gpd</b>
Influent Wastewater to Screening Building*	14.158	456,704	671,510
Influent Wastewater to SBRs	14.140	456,121	616,448
Internal Recycle	0.342	11,033	71,194
Treated Effluent to Disc Filters	13.642	440,074	622,912
Final Effluent Discharge	10.952	353,290	514,000
Applebrook Golf Course	No Discharge	No Discharge	No Discharge

### **Chemical Usage:**

<b>December 2015</b>		
<b>Chemical</b>	<b>Daily Average</b>	<b>Total Monthly</b>
Soda Ash	426	4,250
Aluminum Sulfate solution	80.9	2,509
Polymer (centrifuge)	0.84	18.48

*\*twenty two (22) days of centrifuge operation*

During December, sludge wasting to the sludge holding tanks and decanting of the sludge holding tanks was ongoing. Process monitoring included pH, total alkalinity and total solids.

Sludge holding tank No. 1 was in service. The level at the beginning of December was 9.95 feet and the level at the end of the month was 15.6 feet. The average pH concentration was 6.60 S.U. and average total alkalinity concentration was 141 mg/L. Zero gallons of supernatant were decanted during the month. 250 pounds of soda ash were added.



Sludge holding tank No. 2 was in service. The level at the beginning of the month was 7.46 feet and the level at the end was 4.36. The average pH concentration was 6.07 S.U. and average total alkalinity concentration was 102 mg/L. Zero pounds of soda ash were added. Zero gallons of supernatant were decanted.

### **Significant Storm/Hydraulic Loading Events**

During December, there were two (2) storm events resulting in a daily precipitation amount equal to or greater than 0.5 inches measured during a 24 hour period. These events occurred on December 1<sup>st</sup> and 19<sup>th</sup> resulting in 0.69 and 1.09 inches of rainfall, respectively. Plant operations were adjusted to manage the precipitation to prevent exceedances of the permitted discharge limitations for Outfall 001.

### **Minor Repairs and Preventative Maintenance**

Replace UV lamps on Bank no. 1, module 2, lamps 2, 6 module 3 lamp 2, 6 module 4, and lamp 3, 7.

Replace UV lamps on Bank no. 2, module 2, lamp 1, 5, module 4, lamp 2, 6 and 3, 7 module 5 lamp 1,4.

Troubleshoot disc filter number 2, valve number 3.

Rewire limit switch on disc filter number 3 valve number 3.

Clean chemical injector located on the static mixer which feeds alum to the disc filters. Chemical injector was clogged with chemical build up.

Clean chemical injector pump which supply's alum to the disc filters.

Replaced the LDO caps for SBR 1, 3 and 4 LDO probes. Calibrated LDO sensors.

**Draft**  
**EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY**  
**MEETING MINUTES**  
**December 14, 2015**

The East Goshen Township Municipal Authority held their regular public meeting on Monday, December 14, 2015 at 7:00 pm at the East Goshen Township building. Members in attendance were: Chairman Kevin Cummings, Jack Yahraes, Dana Pizarro and Ed McAssey. Also in attendance were: Rick Smith (Township Manager), Mike Ellis (Pennoni), Carmen Battavio (Township Supervisor) and Jessica Wiesak (Attorney).

**COMMON ACRONYMS:**

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

**Call to Order & Pledge of Allegiance**

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

**CHAIRMAN'S/MEMBERS REPORTS**

1. Jack reported that he and Mark Miller went to do a visual inspection of the West Goshen Sewer Treatment Plant. A representative of HRG took them through the plant.
2. Ed attended the West Goshen Sewer Authority meeting on December 2, 2015. He provided a handout and gave the following report:
  - a. A new board member, Ted Murphy, a West Chester attorney, was introduced.
  - b. Goose Creek Stream was discussed. The final report was submitted to EPA on 10/30/15. EPA must review the report and reconsider the Goose Creek designation as nutrient impaired. WGSA is hoping for a 0.8 phosphorus level in the effluent.
  - c. The new methane gas burner is having problems possibly because of an old booster pump.
  - d. The board approved a requisition for \$6,687 to install new aluminum stairs on the new boiler.
  - e. An engineering firm did a structural review of the STP. In general things are in good shape; however, the primary clarifier #3 tank wall may need work and the operations building needs a new roof.
  - f. The secondary digester needs a new cover. The proposal for a steel cover is \$208,870. Installation would be an additional cost. STP staff is considering a Dystor-fabric cover but don't have a cost yet.



g. The STP staff is considering a replacement for the system centrifuges using volute presses. Two options are being considered: 2 units with a capacity of 53 gpm at 2% solids budget \$700,000 or 1 unit with additional drum at 105 gpm budget \$465,000.

h. Development and maintenance issues were discussed.

3. Jack reported that Fran is in hospice at Barclay Friends. He has been a member of the Authority for 38 years.

## **Sewer Reports**

### **1. Director of Public Works, Mark Miller's written report:**

Meters: We checked all meters once a week, no problems to report

Average flow – 820,362

November Precipitation – 1.97

C.C. Collection: We checked all pumping stations on a daily basis with no problems to report. We will be pulling pumps this month as part of our routine maintenance.

We replaced the manhole castings on Amstel Way; they were the old style lids. We will be replacing several others in the neighborhood.

R.C. Collection: All pump stations were visited on a routine basis with no problems to report. Building maintenance was performed in house. I was asked to take a tour of the West Goshen plant last week. I asked Jack Yahraes if he wanted to take a field trip. We toured the plant with David Woodward and their new Engineer.

R.C. Plant: Was visited on a routine basis with no problems to report.

Alarms: We responded to 2 alarms for November.

PA One Calls: We received 31 PA One calls for November.

### **2. Pennoni Engineer's Report**

Mike Ellis provided the following report:

Invoices: Invoices with summaries are provided under separate cover.

Ridley Creek Sewage Treatment Plant (RCSTP):

We met with the PW Department to determine the desired content for a new Standard Operating Procedures/O&M Manual for the RCSTP and the Township's pump stations. A proposal to prepare the Manual was submitted.

Reservoir Rd Pump Station:

Soft dig test pits at the proposed petroleum products pipeline crossings were performed on November 13, 2015. We observed and documented the pipeline locations and depths. Design plans were updated and resubmitted to the three utility companies for approval of the proposed crossings. Williams-Transco has approved the plans, and we are awaiting responses from Sunoco and PPL-IEC.

Aqua Water provided a "will serve" letter for a water service to the pump station.

Design plans are 99% complete subject to addressing limited comments from Public Works. We are awaiting comments from the Township Codes Department also.

Application packages were submitted on November 19, 2015 to PADEP for the Ridley Creek GP-5 "Utility Line Stream Crossings" and GP-8 "Temporary Road Crossings (across streams)" permits and for the Chester Creek Small Projects Joint Permit for the pump station site and Chester Creek utility crossing.

1 The application package for an Individual NPDES Permit for Stormwater Discharges  
2 Associates with Construction Activities was submitted to the Chester County  
3 Conservation District on December 7, 2015.

4 We anticipate submitting the PennDOT Highway Occupancy Permit application for force  
5 main construction along and across E. Strasburg Road and Rt. 352, including detour route  
6 plans for road closures, by December 15, 2015.

7 The tentative schedule follows:

8 Submit PADEP GP and JP Permit application	November 19, 2015
9 Submit NPDES permit application	December 7, 2015
10 Submit PennDOT HOP Application for force main	December 15, 2015
11 Submit PADEP WQM Part II Permit application	December 21, 2015
12 PennDOT Permit issuance	January 2016
13 PADEP & CCD Permit issuances	March-April 2016

#### 14 15 Semi-Annual I&I Reports

16 The PW Department plans to download portable meter data and forward to us by  
17 December 14, 2015. We intend to analyze data and prepare a semi-annual I&I report by  
18 the end of December.

#### 19 New Connections

20 We reviewed a couple of iterations of a grinder pump plan submission for a proposed  
21 new house on a subdivided parcel at 930 N. Chester Road.  
22  
23

24 **3. Big Fish Environmental Services** – Scott's report showed that the Ridley Creek sewage  
25 treatment plant outfall 001 achieved compliance with the NPDES discharge permit during  
26 October 2015. Discharge to Applebrook continued during October. Chemical usage utilized for  
27 total phosphorus removal, pH and total alkalinity remained consistent with previous months. No  
28 mechanical or operational issues were observed during operation of sludge dewatering  
29 equipment.

30 During November there was 1 storm event resulting in daily precipitation amount equal to or  
31 greater than 0.5 inches measured during a 24 hour period. This event occurred on November  
32 19<sup>th</sup> resulting in 1.06 inches of rainfall. Plant operations were adjusted to manage the  
33 precipitation to prevent exceedances of the permitted discharge limitations for Outfalls 001 and  
34 002.

35 No unscheduled minor repairs or equipment failures were experienced during November.  
36 Scheduled repairs during the month included the following:

37 November 19- replaced failed UV lamps and installed a new polymer tote.  
38 November 23- flushed the aluminum sulfate chemical lines.  
39  
40

#### 41 **Approval of Minutes**

42 Jack moved to accept the minutes of November 9, 2015. Dana seconded the motion. The motion  
43 passed unanimously.  
44  
45  
46

1  
2 **Approval of Invoices**

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

- 4 a. Pennoni #665054 \$ 172.50  
5 b. Pennoni #665055 \$ 86.25  
6 c. Pennoni #665360 \$ 6,690.75

7 Dana seconded the motion. The motion passed unanimously. Mike reviewed the status  
8 of the budgets for these payments.

9 2. Jack moved to approve payment of the following Gawthrop invoices:

- 10 a. Gawthrop Invoice #137649 \$ 380.00  
11 b. Gawthrop Invoice #139094 \$ 780.00

12 Dana seconded the motion. The motion passed unanimously.

13 3. Dana moved to approve payment of the Shainline Excavating invoice #39818 in the  
14 amount of \$1,900.00. Ed seconded the motion. The motion passed unanimously.  
15

16 **Liaison Reports**

17 Board of Supervisors – Carmen reported that they approved the 2016 budget. They are still in  
18 discussion about police staffing.  
19

20 **Financial Reports**

21 Jon Altshul provided the following written report:

22 In November, the Municipal Authority recorded \$113 in revenues (all from interest) and \$9,986  
23 in expenses for a negative variance of -\$9,873. As of November 30th, the fund balance was  
24 \$1,488,679 of which \$1,426,785 is in the main construction account.  
25

26 **Old Business**

- 27 1. Microbeads – Dana heard the government wants to ban them.  
28 2. Officers for 2016 – Jack mentioned that based on the rotation, the Chairman will be  
29 Dana, Vice Chairman Ed, Secretary Jack, Treasurer Kevin and Assistant Sec/Treas Fran.  
30

31 **Goals**

32 Kevin reviewed the goals for 2015.

33 Goals for 2016 were discussed with the following result:

- 34 1. Newsletter articles – It was decided that the MA will submit articles on an as needed  
35 basis since they don't hold any events.  
36 2. C, D, E, & F will be included. B (Reservoir Rd Pump Station) should be done so it  
37 won't be included. It was decided to add another goal – Enhance operating procedures.  
38

39 **New Business**

40 1. Pennoni 2016 Fee Schedule was discussed. They are proposing a 3% increase. After  
41 discussion Kevin made a motion to reappoint Pennoni as Authority Engineer for 2016 at the  
42 current 2015 rates. Dana seconded the motion. The motion passed. Kevin asked Rick to check  
43 on the rate that the Board of Supervisors approved for Pennoni for 2016.

44 2. O&M Manual – Pennoni presented a proposal to prepare a new Operations and  
45 Maintenance (O&M) Manual for the Ridley Creek Sewage Treatment Plant (RCSTP) and for the  
46 pump stations in the conveyance systems. Dana requested that they supply a searchable pdf on



1 disk. Dana moved to approve Pennoni's proposal for a new O&M Manual not to exceed  
2 \$12,500.00 without written consent. Ed seconded the motion. The motion passed unanimously.

3 3. Budget Reallocation for Reservoir Road Pump Station – Mike reviewed the original  
4 budget and items that were added. They are requesting that funds remaining from several  
5 completed activities (\$26,915) be reallocated to Phases 11 and 12 and approx. 20 hours for  
6 miscellaneous items. Kevin moved to approve the budget reallocation for Reservoir Road Pump  
7 Station. Dana seconded the motion. The motion passed unanimously.

8 4. Big Fish presented a request for a 2% fee increase for 2016. Jack moved to approve  
9 the 2% increase for Big Fish. Kevin seconded the motion. The motion passed unanimously.  
10

### 11 **Capacity Requests**

12 1. 942 Cornwallis Drive - The subdivision plan proposes to split the 3.5 acre parcel into  
13 2 lots. The existing home is connected to public sewer. The applicant proposes to demolish the  
14 existing home and redevelop the lot with 2 new single family homes. The applicant is requesting  
15 capacity for one new EDU and to reuse the existing EDU. Ed moved to approve the sewer  
16 capacity request with a fee of \$7,148.00 and authorize staff to forward the sewer planning  
17 module exemption request to DEP. Jack seconded the motion. The motion passed unanimously.  
18  
19

### 20 **Adjournment**

21 There being no further business, Dana moved to adjourn the meeting. Jack seconded the motion.  
22 The motion passed unanimously. The meeting was adjourned at 8:00 pm. The next meeting will  
23 be held on Monday, January 11, 2016 at 7:00 pm.  
24

25 Respectfully submitted,

26  
27  
28 Ruth Kiefer

29 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 # : 668503  
Invoice Date : 12/21/2015  
Project : EGMA1501  
Project Name : 2015 General Services

For Services Rendered through: 12/13/2015

Prepared for and attended November MA meeting, issued December Engineer's Report, reviewed December MA meeting agenda, reviewed and provided minor comments on MA's 2016 goals, and attended RCSTP & Pump Station O&M Manual scoping meeting with Public Works Dept.

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

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

Labor :	1,063.75
Expense :	0.00
Phase Total :	1,063.75

Amount Due This Invoice

\$1,063.75

Fee :	12,000.00
Prior Billings :	9,450.25
Current Billings :	1,063.75
Total Billings :	10,514.00

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

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	9.25	115.00	1,063.75
Labor Total:	9.25		1,063.75

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

Labor :	\$1,063.75
Expense :	\$0.00

Total Project : EGMA1501 -- 2015 General Services

Labor :	\$1,063.75
Expense :	\$0.00

OK RS 1-8-16

East Goshen Municipal Authority  
EGMA1501 Invoice Summary  
Invoice Date 12/21/2015

**Project:** EGMA1501  
**Pennoni Job No.:** 2015 General Services  
**Invoice No:** 668503  
**Invoice Period:** 11/9/2015 to 12/13/2015  
**Initial Authorization:** \$ 12,000.00 **Date:** 12/21/2015  
**Contract Amount:** \$ 12,000.00  
**Previously Invoiced:** \$ 9,450.25  
**Current Invoice:** \$ 1,063.75  
**Invoiced to Date (\$):** \$ 10,514.00  
**Invoiced to Date (%):** 88%  
**Remaining Budget (\$):** \$ 1,486.00  
**Remaining Budget (%):** 12%

**Budget by Phase:**

2015 General  
Services

**Phase Name:**  
**Phase Budget:** \$ 12,000.00  
**Previously Invoiced:** \$ 9,450.25  
**Current Invoice:** \$ 1,063.75  
**Invoiced to Date (\$):** \$ 10,514.00  
**Invoiced to Date (%):** 88%  
**Remaining Budget (\$):** \$ 1,486.00  
**Remaining Budget (%):** 12%

**Comments:** Prepared for and attended November MA meeting, issued December Engineer's Report, reviewed December MA meeting agenda, reviewed and provided minor comments on MA's 2016 goals, and attended RCSTP & Pump Station O&M Manual scoping meeting with Public Works Dept.





# 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 # : 668504  
Invoice Date : 12/21/2015  
Project : EGMA1504  
Project Name : Reservoir Rd PS Design &  
Permitting

For Services Rendered through: 12/13/2015

Phase 11 - Continued coordination for soft dig petroleum pipeline test pits scope and schedule with PPL-IES, Sunoco, Williams-Transco, and Township; performed on-site observation and field measurements during test pits; revised force main plans following test pits; prepared plan submissions to PPL-IES, Sunoco, and Williams-Transco for pipeline crossing approvals; completed Permit Plan submissions (approx 99% complete plans); continued preparation of specifications; cursory review of Permit Plans with Public Works Dept.

Phase 12 - Finalized and submitted NPDES permit application; finalized and submitted PADEP Chapter 105 GP-5 "Utility Line Stream Crossings" & GP-8 "Temporary Road Crossings (across streams)" permit application for Ridley Creek and Chapter 105 GP-5 "Utility Line Stream Crossings" & Small Projects Joint Permit application for Chester Creek and pump station site; continued preparation of PADEP WQM Part II permit application, and prepared PennDOT Highway Occupancy Permit application including detour route plans for force main construction along E. Strasburg Rd and across N. Chester Rd.

**Phase : 11 -- Final Design**

**Total Phase : 11 -- Final Design**

Labor :	10,509.25
Expense :	0.00
Phase Total :	10,509.25

**Phase : 12 -- Permitting**

**Total Phase : 12 -- Permitting**

Labor :	6,238.50
Expense :	0.00
Phase Total :	6,238.50

**Amount Due This Invoice**

**\$16,747.75**

Fee :	136,316.25
Prior Billings :	113,144.00
Current Billings :	16,747.75
Total Billings :	129,891.75

OK RS 1-8-16

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 : 11 -- Final Design**

<b>Labor Class</b>	<i>Hours/ Units</i>	<i>Rate</i>	<i>Amount</i>
Authority Engineer	2.25	115.00	258.75
Project Engineer	9.75	97.00	945.75
Senior Enviromental Scientist	1.00	90.00	90.00
Associate Engineer	70.25	85.00	5,971.25
Senior Engineering Technician	6.00	85.00	510.00
Engineering Technician II	35.50	77.00	2,733.50
<b>Labor Total:</b>	<b>124.75</b>		<b>10,509.25</b>

**Total Phase : 11 -- Final Design****Labor : \$10,509.25****Expense : \$0.00****Phase : 12 -- Permitting**

<b>Labor Class</b>	<i>Hours/ Units</i>	<i>Rate</i>	<i>Amount</i>
Authority Engineer	5.25	115.00	603.75
Project Engineer	5.50	97.00	533.50
Staff Engineer	4.00	90.00	360.00
Senior Enviromental Scientist	13.25	90.00	1,192.50
Associate Engineer	41.75	85.00	3,548.75
<b>Labor Total:</b>	<b>69.75</b>		<b>6,238.50</b>

**Total Phase : 12 -- Permitting****Labor : \$6,238.50****Expense : \$0.00****Total Project : EGMA1504 -- Reservoir Rd PS Design & Permitting****Labor : \$16,747.75****Expense : \$0.00**

East Goshen Municipal Authority  
EGMA1504 Invoice Summary  
Invoice Date 12/21/2015

**Project:** EGMA1504  
**Pennoni Job No.:** Reservoir Rd PS Design & Permitting  
**Invoice No:** 668504  
**Invoice Period:** 11/9/2015 to 12/13/2015  
**Initial Authorization:** \$ 167,120.00 **Date:** 12/21/2015  
**Contract Amount:** \$ 167,120.00  
**Previously Invoiced:** \$ 135,091.75  
**Current Invoice:** \$ 16,747.75  
**Invoiced to Date (\$):** \$ 151,839.50  
**Invoiced to Date (%):** 91%  
**Remaining Budget (\$):** \$ 15,280.50  
**Remaining Budget (%):** 9%

**Budget by Phase:**

Phase Name:	Final Design	Phase 11
Phase Budget:	\$ 61,500.00	
Previously Invoiced:	\$ 45,950.00	
Current Invoice:	\$ 10,509.25	
Invoiced to Date (\$):	\$ 56,459.25	
Invoiced to Date (%):	92%	
Remaining Budget (\$):	\$ 5,040.75	
Remaining Budget (%):	8%	

**Comments:** Phase 11 - Continued coordination for soft dig petroleum pipeline test pits scope and schedule with PPL-IES, Sunoco, Williams-Transco, and Township; performed on-site observation and field measurements during test pits; revised force main plans following test pits; prepared plan submissions to PPL-IES, Sunoco, and Williams-Transco for pipeline crossing approvals; completed Permit Plan submissions (approx 99% complete plans); continued preparation of specifications; cursory review of Permit Plans with Public Works Dept.



East Goshen Municipal Authority  
EGMA1504 Invoice Summary  
Invoice Date 12/21/2015

**Project:** EGMA1504  
**Pennoni Job No.:** Reservoir Rd PS Design & Permitting  
**Invoice No:** **668504**  
**Invoice Period:** 11/9/2015 to 12/13/2015  
**Initial Authorization:** \$ 167,120.00 **Date:** 12/21/2015  
**Contract Amount:** \$ 167,120.00  
**Previously Invoiced:** \$ 135,091.75  
**Current Invoice:** \$ 16,747.75  
**Invoiced to Date (\$):** \$ 151,839.50  
**Invoiced to Date (%):** 91%  
**Remaining Budget (\$):** \$ 15,280.50  
**Remaining Budget (%):** 9%

**Budget by Phase:**

Phase Name:	Permitting	Phase 12
Phase Budget:	\$ 28,610.50	
Previously Invoiced:	\$ 16,151.50	
Current Invoice:	\$ 6,238.50	
Invoiced to Date (\$):	\$ 22,390.00	
Invoiced to Date (%):	78%	
Remaining Budget (\$):	\$ 6,220.50	
Remaining Budget (%):	22%	

**Comments:** Phase 12 - Finalized and submitted NPDES permit application; finalized and submitted PADEP Chapter 105 GP-5 "Utility Line Stream Crossings" & GP-8 "Temporary Road Crossings (across streams)" permit application for Ridley Creek and Chapter 105 GP-5 "Utility Line Stream Crossings" & Small Projects Joint Permit application for Chester Creek and pump station site; continued preparation of PADEP WQM Part II permit application, and prepared PennDOT Highway Occupancy Permit application including detour route plans for force main construction along E. Strasburg Rd and across N. Chester R

# Reservoir Road Pump Station Design & Permitting

## INVOICE SUMMARY

For Services Rendered through: 12/13/2015

Task No.	Activity	Contract Amount*	Invoiced Effort thru 12/13/2015	Remaining Budget (\$)	Remaining Budget (%)	Completed?
1	Concept Design	\$13,655.75	\$13,655.75	-	-	Yes
2	DEP WQM Pre-App. Meeting	\$1,300.00	\$1,300.00	-	-	Yes
3	Existing Conditions Survey	\$22,783.75	\$22,783.75	-	-	Yes
4	Sewer Stakeout in Easements	\$0.00	\$0.00	-	-	Scope eliminated
5	1636 Bow Tree Dr. Boundary Survey & Easement	\$4,020.00	\$0.00	\$4,020.00	100%	No
6	Additional Boundary Surveys & Easements	\$0.00	\$0.00	-	-	Scope eliminated
7	Geotechnical Borings	\$4,000.00	\$4,000.00	-	-	Yes
8	Install Permanent Survey Benchmarks	\$0.00	\$0.00	-	-	Scope eliminated
9	Progress Design	\$29,450.00	\$29,450.00	-	-	Yes
10	Infiltration Testing	\$1,800.00	\$1,800.00	-	-	Yes
11	Final Design	\$61,500.00	\$56,459.25	\$5,040.75	8%	No
12	Permitting	\$28,610.50	\$22,390.00	\$6,220.50	22%	No
TOTAL		\$167,120.00	\$151,838.75	\$15,281.25	9%	

\* After 12/14/2015 approved re-allocation of task budgets.

# Memo

---

To: Municipal Authority  
From: Jon Altshul  
Re: MA December Financial Reports  
Date: January 6, 2016

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In December, the Municipal Authority recorded \$20,112 in revenues (primarily due to a \$20,000 transfer from the Sewer Operating Fund) and \$47,515 in expenses, for a negative variance of \$27,403. Expenses included \$8,052 for the quarterly administrative charge-back, \$27,409 for the required 28% of the debt service on the 1998 debt and \$11,016 for Reservoir Road Pump Station engineering. As of December 31<sup>st</sup>, the fund balance was \$1,461,276, of which \$1,415,878 is in the main construction account.

A complete list of all year-to-date expenses and revenues is provided.

**EAST GOSHEN TOWNSHIP**  
**1580 PAOLI PIKE**  
**WEST CHESTER, PA**  
**Municipal Authority**  
**December 2015**

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
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<b>MUNICIPAL AUTHORITY BEGINNING FUND BALANCE</b>			<b>1,488,678.91</b>	
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**RCSTP BUDGET**

<b>REVENUE</b>				
INTEREST EARNED - RCSTP EXPANSION	07341 1020	1,600.00	111.59	1,494.45
GRANT REVENUE	07392 0800	0.00	0.00	0.00

<b>TOTAL REVENUE</b>		<b>1,600.00</b>	<b>111.59</b>	<b>1,494.45</b>
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<b>EXPENSES</b>				
R.C.-CAP. PROJ.-ENGINEER	07424 7451	0.00	0.00	0.00
R.C. CAP EXPANSION GEN'L CONTRACTOR	07424 7452	0.00	0.00	0.00
R.C. CAP EXPANSION - ELECTRICAL	07424 7453	0.00	0.00	0.00
R.C. CAP EXP CONTINGENCY CAPITAL	07424 7454	0.00	0.00	0.00
R.C. CAP EXP CONTINGENCY ONGOING	07424 7455	0.00	0.00	0.00
R.C. CAP EXP ADDITIONAL CONTINGENCY	07424 7456	0.00	0.00	0.00
TRANSFER TO SEWER SINKING FUND	07492 0550	0.00	0.00	0.00
TRANSFER TO AUTHORITY CAP FUND	07492 0990	0.00	0.00	0.00

<b>TOTAL EXPENSES</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
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<b>RCSTP NET RESULT</b>		<b>1,600.00</b>	<b>111.59</b>	<b>1,494.45</b>
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**OPERATING BUDGET**



**EAST GOSHEN TOWNSHIP**  
**1580 PAOLI PIKE**  
**WEST CHESTER, PA**  
**Municipal Authority**  
**December 2015**

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
<b>REVENUE</b>				
INTEREST EARNINGS	07341 1000	15.00	0.74	10.82
C.C. TAPPING FEES	07364 1100	0.00	0.00	27,600.00
R.C.TAPPING FEES	07364 1110	14,296.00	0.00	16,296.00
CONNECTION FEES - SEWER	07364 1130	0.00	0.00	1,268.64
MISCELLANEOUS REVENUE	07380 1000	0.00	0.00	423.36
TRANSFER FROM SEWER OPERATING	07392 0500	105,105.00	20,000.00	40,000.00
<b>TOTAL REVENUE</b>		<b>119,416.00</b>	<b>20,000.74</b>	<b>85,598.82</b>
<b>EXPENSES</b>				
ADMINISTRATIVE WAGES	07424 1400	33,323.00	8,051.60	32,302.60
MISCELLANEOUS EXPENSE	07424 3000	3,000.00	0.00	1,468.05
MUNIC.AUTH.-AUDITING	07424 3110	10,984.00	0.00	8,900.00
ENGINEERING SERVICES	07424 3130	37,300.00	258.75	33,524.50
LEGAL SERVICES	07424 3140	9,000.00	780.00	4,100.00
M.C.-DVRFA-DEBT SERVICE	07471 1000	23,240.00	23,240.00	23,240.00
M.C.-DVRFA-INTEREST PAYMN	07472 1000	4,169.00	4,169.00	4,169.00
M.C.-DVRFA-INTEREST PAYMN	07472 1010	0.00	0.00	0.00
<b>TOTAL EXPENSES</b>		<b>121,016.00</b>	<b>36,499.35</b>	<b>107,704.15</b>
<b>OPERATING NET RESULT</b>		<b>(1,600.00)</b>	<b>(16,498.61)</b>	<b>(22,105.33)</b>
<b>CAPITAL BUDGET</b>				

**EAST GOSHEN TOWNSHIP**  
**1580 PAOLI PIKE**  
**WEST CHESTER, PA**  
**Municipal Authority**  
**December 2015**

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
<b>REVENUE</b>				
DCED GRANT	07354 0400	0.00	0.00	37,162.00
LOAN PROCEEDS-SEWER PROJECT	07393 1001	0.00	0.00	0.00
TRANSFER FROM SEWER CAP RESERVE	07392 0900	0.00	0.00	0.00
<b>TOTAL REVENUE</b>		0.00	0.00	37,162.00
<b>EXPENSES</b>				
MARYDELL PUMP STATION - ENGINEER	07425 1000	0.00	0.00	0.00
MARYDELL PUMP STATION -CONSTRUCTION	07425 2000	0.00	0.00	0.00
MANHOLE COVER REPLACEMENTS	07424.7405	0.00	0.00	0.00
C.C. CAPITAL - COLLECTION	07424.7420	0.00	0.00	0.00
LOCHWOOD ABANDONMENT ENGINEER	07424 7475	0.00	0.00	0.00
LOCHWOOD ABANDONMENT CONSTRUCTION	07424 7476	0.00	0.00	0.00
LOCHWOOD ELIMINATION PHASE 2	07424 7477	0.00	0.00	0.00
HERSHEY MILL STATION - ENGINEER	07426 1000	0.00	0.00	0.00
HERSHEY MILL STATION - CONSTRUCTION	07426 2000	0.00	0.00	0.00
RESERVE PUMP STATION - ENGINEER	07427 1000	0.00	0.00	0.00
RESERVE PUMP STATION - CONSTRUCTION	07427 2000	0.00	0.00	0.00
RESERVOIR PUMP STATION - ENGINEER	07428 1000	100,000.00	11,015.71	144,451.46
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000	0.00	0.00	0.00
<b>TOTAL EXPENSES</b>		100,000.00	11,015.71	144,451.46
<b>CAPITAL NET RESULT</b>		(100,000.00)	(11,015.71)	(107,289.46)
<b>MUNICIPAL AUTHORITY ENDING FUND BALANCE</b>			1,461,276.18	

Report Date 01/06/16

GL Transaction Details

PAGE 1

MGRP18 run by BRIAN

1 : 33 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000			INTEREST EARNINGS			0.00				
	1501	JE	46156		1.44		02/03/15	INTEREST		INTEREST EARNED JANUARY 2015 07 FUND
	1501			0.00	1.44	-1.44				
	1502		46526		1.17		03/02/15	INTEREST		INTEREST EARNED FEBRUARY 2015 07 FUND
	1502			0.00	1.17	-2.61				
	1503		46944		1.03		04/02/15	INTEREST		INTEREST EARNED MARCH 2015 07 FUND
	1503			0.00	1.03	-3.64				
	1504		47407		0.61		05/04/15	INTEREST		INTEREST EARNED APRIL 2015 07 FUND
	1504			0.00	0.61	-4.25				
	1505		47825		0.75		06/01/15	INTEREST		INTEREST EARNED MAY 2015 07 FUND
	1505			0.00	0.75	-5.00				
	1506		48334		0.64		07/02/15	INTEREST		INTEREST EARNED JUNE 2015 07 FUND
	1506			0.00	0.64	-5.64				
	1507		48782		0.56		08/03/15	INTEREST		INTEREST EARNED JULY 2015 07 FUND
	1507			0.00	0.56	-6.20				
	1508		49202		0.64		09/01/15	INTEREST		INTEREST EARNED AUGUST 2015 07 FUND
	1508			0.00	0.64	-6.84				
	1509		49635		0.85		10/02/15	INTEREST		INTEREST EARNED SEPT.2015 07 FUND

Report Date 01/06/16

GL Transaction Details

PAGE 2

MGRP18 run by BRIAN

1 : 33 PM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
1509			0.00	0.85	-7.69				
1510		50108		1.28		11/03/15	INTEREST		INTEREST EARNED OCTOBER 2015 07 FUND
1510			0.00	1.28	-8.97				
1511		50447		1.11		12/03/15	INTEREST		INTEREST EARNED NOVEMBER 2015 07 FUND
1511			0.00	1.11	-10.08				
1512		50861		0.74		01/04/16	INTEREST		INTEREST EARNED DECEMBER 2015 07 FUND
1512			0.00	0.74	-10.82				
07341-1000	****	*** *****	0.00	10.82	-10.82				
07341-1020	INTEREST EARNED - RCSTP EXPANSION				0.00				
1501		46156		131.97		02/03/15	INTEREST		INTEREST EARNED JANUARY 2015 07 FUND
1501			0.00	131.97	-131.97				
1502		46526		119.08		03/02/15	INTEREST		INTEREST EARNED FEBRUARY 2015 07 FUND
1502			0.00	119.08	-251.05				
1503		46944		131.27		04/02/15	INTEREST		INTEREST EARNED MARCH 2015 07 FUND
1503			0.00	131.27	-382.32				
1504		47407		125.90		05/04/15	INTEREST		INTEREST EARNED APRIL 2015 07 FUND
1504			0.00	125.90	-508.22				



Report Date 01/06/16

GL Transaction Details

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MGRP18 run by BRIAN

1 : 34 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1020	1505	JE	47825		128.37		06/01/15	INTEREST		INTEREST EARNED MAY 2015 07 FUND
1505				0.00	128.37	-636.59				
1506	48334				124.75		07/02/15	INTEREST		INTEREST EARNED JUNE 2015 07 FUND
1506				0.00	124.75	-761.34				
1507	48782				129.80		08/03/15	INTEREST		INTEREST EARNED JULY 2015 07 FUND
1507				0.00	129.80	-891.14				
1508	49202				128.91		09/01/15	INTEREST		INTEREST EARNED AUGUST 2015 07 FUND
1508				0.00	128.91	-1,020.05				
1509	49635				124.25		10/02/15	INTEREST		INTEREST EARNED SEPT.2015 07 FUND
1509				0.00	124.25	-1,144.30				
1510	50108				126.53		11/03/15	INTEREST		INTEREST EARNED OCTOBER 2015 07 FUND
1510				0.00	126.53	-1,270.83				
1511	50447				112.03		12/03/15	INTEREST		INTEREST EARNED NOVEMBER 2015 07 FUND
1511				0.00	112.03	-1,382.86				
1512	50861				111.59		01/04/16	INTEREST		INTEREST EARNED DECEMBER 2015 07 FUND
1512				0.00	111.59	-1,494.45				
07341-1020	****	***	*****	0.00	1,494.45	-1,494.45				

Report Date 01/06/16

GL Transaction Details

PAGE 4

MGRP18 run by BRIAN

1 : 34 PM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07354-0400	DCED	GRANT			0.00				
	1506	RE 48107		37,162.00		06/17/15	48107 1		GRANT - RESERVOIR RD PUMP STA
	1506		0.00	37,162.00	-37,162.00				
07354-0400	****	*** *****	0.00	37,162.00	-37,162.00				
07364-1100	C.C.	TAPPING FEES			0.00				
	1505	47736		2,000.00		05/27/15	47736 1		TAP IN FEE - 1334 A PARK AVE
	1505		0.00	2,000.00	-2,000.00				
	1506	47853		2,000.00		06/03/15	47853 1		TAP-IN FEE FOR 1414 BRAMBLE LN
		47991		2,000.00		06/10/15	47991 1		TAP IN FEE FOR 14 RESERVOIR RD
	1506		0.00	4,000.00	-6,000.00				
	1509	CR 49458		21,600.00		09/21/15	249	8069 1	GOSHEN MEADOWS INVESTORS L.P.
	1509		0.00	21,600.00	-27,600.00				
07364-1100	****	*** *****	0.00	27,600.00	-27,600.00				
07364-1110	R.C.	TAPPING FEES			0.00				
	1504	47236		7,148.00		04/21/15	1123	7875 1	SUNNY RIDGE FARMS LLC
		47278		7,148.00		04/23/15	1128	7875 1	SUNNY RIDGE FARMS LLC
	1504		0.00	14,296.00	-14,296.00				
	1509	RE 49423		2,000.00		09/18/15	49423 1		TAP IN FEE FOR 1606 ATLEE DR
	1509		0.00	2,000.00	-16,296.00				
07364-1110	****	*** *****	0.00	16,296.00	-16,296.00				
07364-1130	CONNECTION	FEES - SEWER			0.00				
	1501	CR 45967		423.00		01/16/15	789	8648 1	GEORGE SMITH & CHRISTINA CONLE
		JE 45968	141.12			01/16/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
1501				141.12	423.00	-281.88				
1502	CR	46296			423.00		02/13/15	248	8650	1 JACOBS, ROBERT & CHERYL
		46479			423.00		02/26/15	2381	8649	1 STOFFLET, MICHAEL
	JE	46297		141.12			02/13/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
		46480		141.12			02/26/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
1502				282.24	846.00	-845.64				
1505	CR	47731			423.00		05/27/15	1124	8651	1 PAPPANO, JOSEPH & PATRICIA
1505				0.00	423.00	-1,268.64				
07364-1130	****	***	*****	423.36	1,692.00	-1,268.64				
07380-1000			MISCELLANEOUS REVENUE			0.00				
1501	JE	45968			141.12		01/16/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
1501				0.00	141.12	-141.12				
1502		46297			141.12		02/13/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
		46480			141.12		02/26/15	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
1502				0.00	282.24	-423.36				
07380-1000	****	***	*****	0.00	423.36	-423.36				
07392-0500			TRANSFER FROM SEWER OPERATING			0.00				
1507		48567			20,000.00		07/16/15	DEPOSIT		DEPOSIT \$ FROM SEWER ACCT.
1507				0.00	20,000.00	-20,000.00				
1512	RE	50544			20,000.00		12/10/15	50544 1		XFER YEAR END EXPENSES - MA
1512				0.00	20,000.00	-40,000.00				
07392-0500	****	***	*****	0.00	40,000.00	-40,000.00				

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Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-1400					0.00				
									ADMINISTRATIVE WAGES
	1503	CD 46874	8,292.10			03/30/15	2267	425	EAST GOSHEN TOWNSHIP - GENERAL 1ST QTR.2015 REIMBURS. FR: MUN.A
	1503		8,292.10	0.00	8,292.10				
	1506	48284	8,292.10			06/30/15	2273	425	EAST GOSHEN TOWNSHIP - GENERAL 2ND QTR.2015 REIMBURSMT FR:MUN.A
	1506		8,292.10	0.00	16,584.20				
	1509	49529	8,292.10			09/25/15	2280	425	EAST GOSHEN TOWNSHIP - GENERAL 3RD QTR 2015 REIMBURSEMNT FR: MA
		49551	-8,292.10			09/25/15	2280	425	EAST GOSHEN TOWNSHIP - GENERAL VOID CK.2280
		49552	7,666.80			09/25/15	2281	425	EAST GOSHEN TOWNSHIP - GENERAL 3RD QTR.2015 REIMBURSEMNT FR: MA
	1509		7,666.80	0.00	24,251.00				
	1512	50666	8,051.60			12/17/15	3003	425	EAST GOSHEN TOWNSHIP - GENERAL 4TH QTR.2015 REIMBURSEMENT FROM
	1512		8,051.60	0.00	32,302.60				
07424-1400	****	*** *****	32,302.60	0.00	32,302.60				
07424-3000					0.00				
									MISCELLANEOUS EXPENSE
	1501	45777	950.00			01/02/15	2260	2132	PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOC 2015 ACTIVE MEMBERSHIP DUES
		46110	500.00			01/29/15	2263	2737	COMMONWEALTH OF PA ANNUAL FEE - NPDES PERMIT -CHAP.
	1501		1,450.00	0.00	1,450.00				
	1506	JE 48342	18.05			07/02/15	BANK FEE		DEPOSIT SLIP ORDER 6/6/15
	1506		18.05	0.00	1,468.05				
07424-3000	****	*** *****	1,468.05	0.00	1,468.05				

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3110	MUNIC.AUTH.-AUDITING					0.00				
	1507 CD	48553		8,900.00			07/16/15	2275	808	MAILLIE FALCONIERO & CO. EXAM.FINANCIAL STATEMENTS 12/31/
	1507			8,900.00	0.00	8,900.00				
07424-3110	**** *** *****			8,900.00	0.00	8,900.00				
07424-3130	ENGINEERING SERVICES					0.00				
	1501	45953		621.50			01/15/15	2261	1052	PENNONI ASSOCIATES INC. SERVICES THRU 12/7/14 GENERAL
		46013		640.00			01/22/15	2262	1052	PENNONI ASSOCIATES INC. SERVICE THRU 11/9/14 GEN.SERVICE
	1501			1,261.50	0.00	1,261.50				
	1502	46311		5,571.50			02/13/15	2264	1052	PENNONI ASSOCIATES INC. SERVICES THRU 1/18/15 2014 CHAP.
	1502			5,571.50	0.00	6,833.00				
	1503	46649		5,685.00			03/12/15	2266	1052	PENNONI ASSOCIATES INC. SERVICES THRU 2/15/15 2014 CHAP.
	1503			5,685.00	0.00	12,518.00				
	1504	47119		4,718.75			04/15/15	2269	1052	PENNONI ASSOCIATES INC. SERV. THRU 3/22/15 2015 GEN.SER
	1504			4,718.75	0.00	17,236.75				
	1505	47583		10,136.50			05/14/15	2270	1052	PENNONI ASSOCIATES INC. SERV.THURU 4/19/15 2015 GEN.SERV
	1505			10,136.50	0.00	27,373.25				
	1506	47984		1,843.75			06/10/15	2272	1052	PENNONI ASSOCIATES INC. SERVICE THRU 5/17/15 2015 GEN.SE
	1506			1,843.75	0.00	29,217.00				



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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3130	1507	CD	48553	1,921.25			07/16/15	2276	1052	PENNONI ASSOCIATES INC. SERV.THRU 6/21/15 2015 SEMI-ANN
1507				1,921.25	0.00	31,138.25				
1508	48772			373.75			08/03/15	2277	1052	PENNONI ASSOCIATES INC. SERVICES THRU 7/19/15 2015 GEN.S
1508				373.75	0.00	31,512.00				
1509	49338			460.00			09/11/15	2279	1052	PENNONI ASSOCIATES INC. SERVICE THRU 8/16/15 2015 GEN.SE
1509				460.00	0.00	31,972.00				
1510	49748			641.25			10/13/15	2283	1052	PENNONI ASSOCIATES INC. SERV.THRU 9/20/15 2015 SEMI-ANN
1510				641.25	0.00	32,613.25				
1511	50314			652.50			11/19/15	2285	1052	PENNONI ASSOCIATES INC. SERV.THRU 10/18/15 2015 GEN.SERV
1511				652.50	0.00	33,265.75				
1512	50665			258.75			12/17/15	3002	1052	PENNONI ASSOCIATES INC. SERVICES THRU 11/8/15 2015 GEN.S
1512				258.75	0.00	33,524.50				
07424-3130	****	***	*****	33,524.50	0.00	33,524.50				
07424-3140	LEGAL SERVICES					0.00				
1503	46649			300.00			03/12/15	2265	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE - 1/12/15 GEN.AUT
1503				300.00	0.00	300.00				
1504	47119			840.00			04/15/15	2268	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE 2/6-2/9/15 GEN.AUT
1504				840.00	0.00	1,140.00				

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3140	1506	CD	47984	860.00			06/10/15	2271	528	GANTHROP GREENWOOD & HALSTED LEGAL SERV. 4/7-4/13/15 GEN.AUT
1506				860.00	0.00	2,000.00				
1507		48553		380.00			07/16/15	2274	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE 6/3-6/8/15 GEN.AU
1507				380.00	0.00	2,380.00				
1508		48918		300.00			08/12/15	2278	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICES 7/13/15 GEN.AUTH
1508				300.00	0.00	2,680.00				
1510		49748		260.00			10/13/15	2282	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICES 8/10/15 GEN.AUTH.
1510				260.00	0.00	2,940.00				
1511		50314		380.00			11/19/15	2284	528	GANTHROP GREENWOOD & HALSTED LEGAL SERV. 10/12/15 GEN.AUTH.
1511				380.00	0.00	3,320.00				
1512		50665		780.00			12/17/15	3001	528	GANTHROP GREENWOOD & HALSTED LEGAL SERV. 11/9-11/20/15 GEN.AU
1512				780.00	0.00	4,100.00				
07424-3140	****	***	*****	4,100.00	0.00	4,100.00				
07428-1000			RESERVOIR PUMP STATION - ENGINEER			0.00				
1501		45954		137.50			01/15/15	10029	1052	PENNONI ASSOCIATES INC. SERV.THUR 12/7/14 RESERV.RD ACT
		46014		852.50			01/22/15	10030	1052	PENNONI ASSOCIATES INC. SERVICE THRU 11/9/14 RESERVOIR R ACT.537
1501				990.00	0.00	990.00				

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1 : 34 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07428-1000	1502	CD	46312	5,382.80			02/13/15	10031	1052	PENNONI ASSOCIATES INC. SERV.THUR 1/18/15 RESERVOIR RD.P ACT 537 PLANNING
1502				5,382.80	0.00	6,372.80				
1503		46650	10,394.70				03/12/15	10032	1052	PENNONI ASSOCIATES INC. SERV. THRU 2/15/15 RESERVOIR RD.
1503			10,394.70		0.00	16,767.50				
1504		47120	18,607.75				04/15/15	10033	1052	PENNONI ASSOCIATES INC. SERV. THRU 3/22/15 RESERVOIR RD. DESIGN & PERMITTING
1504			18,607.75		0.00	35,375.25				
1505		47584	15,825.75				05/14/15	10034	1052	PENNONI ASSOCIATES INC. SERV.THUR 4/19/15 RESERVOIR RD. DESIGN & PERMITTING
1505			15,825.75		0.00	51,201.00				
1506		47990	9,249.50				06/10/15	10035	1052	PENNONI ASSOCIATES INC. SERV.THUR 5/17/15 RESERVOIR RD
1506			9,249.50		0.00	60,450.50				
1507		48554	10,841.50				07/16/15	10036	1052	PENNONI ASSOCIATES INC. SERV.THUR 6/21/15 - RESERV.RD P DESIGN & PERMITTING
1507			10,841.50		0.00	71,292.00				
1508		48773	4,715.25				08/03/15	10037	1052	PENNONI ASSOCIATES INC. SERV.THUR 7/19/15 RESERVOIR RD
1508			4,715.25		0.00	76,007.25				
1509		49341	11,709.00				09/11/15	10038	1052	PENNONI ASSOCIATES INC. SERVICES THRU 8/16/15 RESERV.RD
1509			11,709.00		0.00	87,716.25				

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07428-1000	1510	CD	49749	34,515.75			10/13/15	10039	1052	PENNONI ASSOCIATES INC.
		JE	50127	2,250.00			11/04/15	RECLASS		SERV. THRU 9/20/815 RESERVR RD
										RECLASS EARTHCORE INV.6865
										PYMT. 10/22 CK.10040
1510				36,765.75	0.00	124,482.00				
1511	CD	50190		1,500.00			11/09/15	10041	263	CHESTER COUNTY CONSERVATION DISTRICT
				213.00			11/09/15	10042	2299	RESERVOIR RD. PERMIT FEE
		***		1,713.00	0.00	***				CLEAN WATER FUND -PA DEP - BUREAU WATER
		50313		7,240.75			11/19/15	10043	1052	DISTURBED ACREAGE FEE-RESERV.RD
										PENNONI ASSOCIATES INC.
										SERVICES THRU 10/8/15 RESERVR.RD
1511				8,953.75	0.00	133,435.75				
1512		50423		1,500.00			12/02/15	10044	263	CHESTER COUNTY CONSERVATION DISTRICT
				1,900.00			12/02/15	10045	1248	RESERVOIR RD.PS PROJECT PERMIT
		***		3,400.00	0.00	***				SHAINLINE EXCAVATING INC
		50590		924.96			12/09/15	101	2142	EQUIPMENT RENTAL CONTR.-TEST DUM
										FLAGGER FORCE
										TRAF. CONTROL TO LOCATE PIPE LIN
		50667		6,690.75			12/17/15	102	1052	FOR FUTURE RESERVOIR RD. P/S
										PENNONI ASSOCIATES INC.
										SERV. THRU 11/8/15 RESERVOIR RD
1512				11,015.71	0.00	144,451.46				
07428-1000	****	***	*****	144,451.46	0.00	144,451.46				
07428-2000	RESERVOIR PUMP STATION CONSTRUCTION					0.00				
1510		49947		2,250.00			10/22/15	10040	2911	EARTHCORE SERVICES LLC
		JE	50127		2,250.00		11/04/15	RECLASS		TRUCK RIG MOBILIZATION, SKIDSTEE
										TRACK RIG, AUGER PROBES
										RECLASS EARTHCORE INV.6865
										PYMT. 10/22 CK.10040
1510				2,250.00	2,250.00	0.00				
07428-2000	****	***	*****	2,250.00	2,250.00	0.00				

## East Goshen Township General Ledger

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07471-1000	M.C.-DVRFA-DEBT		SERVICE			0.00				
	1512	CD	50526	23,240.00			12/09/15	2286	430	EAST GOSHEN TWP - SEWER 28% P&I ON 1998 LOAN - PRINCIPAL
	1512			23,240.00	0.00	23,240.00				
07471-1000	****	***	*****	23,240.00	0.00	23,240.00				
07472-1000	M.C.-DVRFA-INTEREST		PAYMN			0.00				
				4,169.00			12/09/15	2286	430	EAST GOSHEN TWP - SEWER 28% P&I ON 1998 LOAN - INTEREST
	1512			4,169.00	0.00	4,169.00				
07472-1000	****	***	*****	4,169.00	0.00	4,169.00				
Grand Total	254,828.97		126,928.63	127,900.34						





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January 7, 2016

EGMA1502

Rick Smith, Township Manager  
East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380

Re: **Semi-Annual Sewer System Status Report #14**  
**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 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 all of the actions taken within the previous six-month period and those which will be taken in the subsequent six-month period. The term "Corrective Action" is replaced with "Action".

### **EXECUTIVE SUMMARY**

The portable metering investigation continued to be focused in the Ridley Creek Service Area during the current period from April 2015 through mid-December 2015. The meter data indicates inflow continues during very large storm events upstream of Manholes (MH) R-018 and R-213. The data also indicates that at least 55,000 gpd of wet weather infiltration is occurring downstream (south) of Paoli Pike (MH R-238) and downstream (east) of N. Chester Road (MH R-018). We recommend an I&I investigation be performed along the interceptor from Paoli Pike downstream to at least MH R-213 including television inspection of pipes, visual observation of manholes, and smoke testing for inflow sources.

Temporary metering was also performed in the Chester Creek Service Area downstream of large 24/7 commercial uses. Portable meters were installed along Airport Road near Ward Avenue to monitor flows from the Brandywine Business Park, which includes UPS, and in the Goshen Corporate Park near Enterprise Drive. Limited flow was observed at both locations. Additionally, a meter was attempted to be installed on Wilson Drive to monitor additional commercial flows from West Goshen, including QVC, but there was such little flow that the meter would not function properly. These commercial uses are therefore not the source of high continuous base flows in the Chester Creek Interceptor.

In the next six months, the Township should continue portable metering in the Ridley Creek Service Area, calibrate all portable meters, perform an I&I investigation of the remainder of the Ridley Creek interceptor up to at least Paoli Pike as noted above, perform an inflow investigation in the Bow Tree Development, and perform an I&I investigation in the Chester Creek Service Area in sewers that

connect to the interceptor between Manhole C-036 and the Reservoir Road permanent meter. One or two portable meters should also be installed along the Chester Creek Interceptor to isolate sources of high base flows in that system. Two new permanent meters should also be installed in the Ridley Creek Collection System.

## **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 the enclosed Figure #1 for a map of previous and future meter locations.

#### ***Previous 9 Months:***

The current period analyzes meter data from April 2015 through mid-December 2015. Four of the temporary meters continued in locations since August 2014, and two additional meters were installed in August 2015.

#### **Ridley Creek Service Area**

- **Blacksmith Shop R-021/R-022**

This meter was first installed along the 10-inch Ridley Creek Interceptor sewer in Manhole R-021 which is located by the historic blacksmith shop on the southeast corner of the intersection of N. Chester Road and E. Boot Road. It meters flows in the Ridley Creek Service Area to the west of N. Chester Road including the Hershey's Mill Pump Station discharge. The portable meter was installed in August 2014. This location had ongoing problems with metering accuracy, possibly due to turbulent flows, so the meter was moved one manhole upstream to Manhole R-022 on the west side of N. Chester Road in the winter of 2014.

Flows at Manhole R-022 since August 2015 have been consistent and are considered accurate. The average flow from August 2015 through mid-November 2015 was 96 gpm (138,280 gpd), and the average base flow was 22 gpm (31,210 gpd). For comparison, this manhole was metered in 2010, and the average and base flows were 75 gpm and 25 gpm respectively. The average flow has increased nearly 20 gpm since 2010, while the base flow has remained approximately the same.

The peak instantaneous flow for the current period was 306 gpm, which occurred on October 28, 2015 during a 1.5-inch storm. The highest daily flow was approximately 217,000 gpd on October 29, 2015 during an additional 0.75-inches of rainfall following the 1.5-inch storm on the previous day. **Inflow is occurring during very large storm events.**

There were two multi-day rainfall events with over 1-inch precipitation per day in the current period. Base (overnight) flows peaked the day after the 1-inch precipitation at 2-3 times the normal base flow and remained elevated for 3-4 days thereafter. **This is likely due to rain-induced infiltration and/or inflow from sump pumps.**

This meter can be removed.

- East Boot Road R-018

This portable meter is installed within Manhole R-018, which is located alongside the Ridley Creek on the 10-inch interceptor sewer four manholes downstream of the Blacksmith Shop Manhole R-022 meter. The meter was installed in August 2014.

The accuracy of the meter data has been considered questionable since the meter was installed due to extreme variability in meter readings. Additionally, the metered flow from August – December 2015 was less than at the upstream Manhole R-022 meter.

The only meter readings in the past 1.5 years that are considered accurate were in October 2014. The average flow and average base flow that month were 75 gpm (107,550 gpd) and 20 gpm (28,550 gpd) respectively. These flows are consistent with metering in this area in 2010.

These October 2014 average and base flows are similar to the flows at the upstream Manhole R-022 despite the connection of 40-50 residences in the Bow Tree neighborhood and along Boot Road in between the two manholes. **It could be loosely concluded based on this data that there is little to no I&I that enters the sewers between Manholes R-022 and R-018.**

We recommend this area continue to be metered, but in a different manhole, such as one manhole upstream.

- East Boot Road R-213

This meter is located in Manhole R-213 alongside the Ridley Creek on the 10-inch interceptor sewer. It meters all flows in the Ridley Creek Service Area originating north of E. Boot Road. The portable meter was installed in August 2014.

Recent metering results follow:

<u>Period</u>	<u>Average Flow gpm (gpd)</u>	<u>Average Base Flow gpm (gpd)</u>
Nov. 19, 2014 – late March 2015	100 (143,770)	47 (67,030)
August 6 – September 29, 2015	73 (105,080)	29 (41,590)
September 30 – December 9, 2015	103 (148,210)	47 (67,100)

Flows are correlated with precipitation. The period from November 2014 through March 2015 consisted of a lot of wet weather events. August 6 through September 29, 2015 was a dry period with very little precipitation, and the flows are much less during this period. There was a 1.75-inch rainfall event on September 29, 2015, and flows increased the following day. There was an additional 1.75 inches of rainfall within three days thereafter, and flows remained elevated through the end of the metering period on December 9, 2015. This is indicative of rain-induced infiltration in the upstream sewer system.

**The base flow comprises approximately 46% of the total flow during extended wet weather periods and 40% during dry weather. Since upstream connections are**

**primarily residential, the base flow is likely indicative of upstream infiltration, not high usage during off-peak hours.**

During the previous monitoring period, the base flow at the upstream Line Road meter (Manhole R-238) was 11 gpm. The wet weather base flow that enters the sewers between manholes R-238 and R-213 is therefore estimated to be 36 gpm (52,000 gpd).

**There is also evidence of inflow during very large storm events** as the daily volume increased by approximately 33% (50,000 gpd) on the second day of a 2-day 2.25-inch rain event on October 28-29, 2015. The flows returned to typical levels on October 30, 2015.

We understand that the Township plans to perform smoke testing in the sewers upstream of this location to identify sources of inflow. The portable meter should remain at this location to evaluate the impact of any smoke testing and repairs along the Ridley Creek Interceptor.

- Tegler R-003

This portable meter is located in Manhole R-003 which is on the 18-inch interceptor, three manholes upstream from the Ridley Creek Sewage Treatment Plant. The only connection between this manhole and the Plant is the Hunt Country neighborhood. The meter was installed in August 2014.

The “flow” values reported by the meter in August – December 2015 are incorrect. The reported “flow” values are less than 1 gpm, but they should be 200+ gpm based on the reported levels and velocities and known flow into the RCSTP. The input parameters in the metering software need to be adjusted to report correct “flow” values. Our analysis below is based upon our calculation of “flow” from the reported levels and velocities using Manning’s Equation with assumptions about slope, friction ‘n’ value, and exact pipe diameter. Due to the assumptions, the flow results are not perfectly accurate and vary from the metered flow at the RCSTP permanent influent meter (see discussion on that meter in bullet below).

Some conclusions can still be drawn from the meter data. There was a trend of increasing flows during fall 2015 similar to that observed at the RCSTP permanent influent meter. Flows increased significantly after the 1.75-inch rainfall event on September 29, 2015 and remained elevated, similar to that observed at the upstream Manhole R-213 meter. Flows increased even more in November 2015. Base flows ranged from 47% to 62% of average daily flow from August – December 2015. The calculated flow at this meter in October 2015 appears consistent with RCSTP influent flows. The base flow during October was calculated to be 221,000 gpd (153 gpm), which is approximately 60% of the average daily flow. **It can be concluded that rain-induced infiltration is a problem in the system upstream of Manhole R-003.**

We recommend the meter inputs be adjusted and the meter remain in this location to continue to monitor instantaneous flows and capacity in the interceptor.

- RCSTP Permanent Influent Meter

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

Instantaneous flow data is not currently available at this meter. Average daily volumes as reported in Big Fish's monthly O&M reports for fall 2015 follow:

<u>Period</u>	<u>Average Flow</u>
August 2015	329,292 gpd
September 2015	335,485 gpd
October 2015	372,085 gpd
November 2015	385,989 gpd

Average flows increased 11% in October, after the large rain storm on September 29, and increased another 4% in November as the wet weather continued. The total increase in average daily flow was approximately 55,000 gpd between August and November. It would be reasonable to conclude that this is an increase in base flow due to wet weather I&I. Approximately 26,000 gpd of this increase occurred upstream of Manhole R-213, none of it occurred upstream of Manhole R-022, so the remaining 29,000 gpd of the increase is believed to be entering the system downstream of Manholes R-213 and R-022, likely along the Ridley Creek interceptor downstream of Manhole R-018.

Installation of a data logger at this permanent meter to record flows at least every hour would allow for more conclusive analysis of I&I in the future.

#### Chester Creek Service Area

- Goshen Corporate Park C-535

This portable meter was installed in Manhole C-535 on the 8-inch collection sewer alongside Enterprise Drive in the Goshen Corporate Park. The meter was installed in August 2015, and it monitors all flows from Goshen Corporate Park plus approximately 13 homes on Generals Way on the east side of Boot Road.

No flow data is available since velocities were not recorded by the meter. However, flow depth data was recorded. The levels are typical of a commercial area with increases between 8:00 am and 5:00 pm Monday-Friday, and low levels overnight and on weekends. The Public Works Department also observed little to no flow at this manhole on multiple occasions. **Although the base flow from this area cannot be quantified, the Goshen Corporate Park is not considered to be the source of significant base flow in the Chester Creek Interceptor.**

This meter should be removed.

- Airport Road C-682

This portable meter is installed in Manhole C-682 on the 8-inch sewer line which crosses Airport Road from West Goshen Township near Wright's Lane. The meter captures flows



from the Brandywine Business Park in West Goshen Township, including the UPS facility. It was installed in August 2015.

Meter data is believed to be inaccurate due to very low flow levels. The Public Works Department observed little to no flow at this manhole on multiple occasions. **The location is not considered to be a source of notable base flow, if any at all, in the Chester Creek Interceptor.**

This meter should be removed.

- Permanent Chester Creek Service Area Meters

Flow data from the ten permanent meters throughout the Chester Creek Service Area were analyzed; six of the meters are in gravity interceptor sewers and four of the meters 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.

Metered flows at the permanent Reservoir Road meter from May – November 2015 are consistent with flows from October 2014 – April 2015, during which significant continuous base flow and inflow during storm events was observed. **Significant usage during overnight hours and/or dry weather infiltration is therefore likely continuing in the upstream sewers.** As noted above, the commercial uses on Enterprise Drive and in the Brandywine Business Park are not the source of these high overnight flows.

*Next 6 Months:*

We recommend the following actions for the next six months:

- Clean and calibrate all portable meters.
- Remove the QVC (MH C-535), Airport Road (MH C-682), and Blacksmith Shop (MH R-022) portable meters.
- Continue portable metering at E. Boot Road R-213 and at Tegler R-003.
- Relocate the E. Boot Road R-018 portable meter one manhole upstream.
- Install a portable meter downstream of the Bellingham Retirement Community to monitor overnight flows into the Ridley Creek Collection System.
- Install a portable meter at the location of the proposed Reservoir Pump Station, MH C-032, to continue to monitor hourly flows within the Chester Creek Interceptor.
- If additional portable meters are available, install one on the Chester Creek Interceptor north of Paoli Pike to monitor flows in the far north portion of the Chester Creek Service Area for continuous base flows.
- Install two new permanent meters in the Ridley Creek Collection System: one at or near MH R-214 and one at or near MH R-022.

- Evaluate installation of data loggers at permanent meters, specifically at the RCSTP Treatment Plant Influent Meter, to monitor instantaneous flows. This meter is more reliable than the portable meters and would eliminate the need for portable metering at Tegler R-003.

2. **Action #2: Televising**

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

***Previous 9 Months:***

**Ridley Creek Service Area**

- Cleaned and televised Wentworth Development, Cornwallis Drive, Colonial Drive, a portion of Paoli Pike, Highland Avenue, Taylor Road, and Vista Farms.

**Chester Creek Service Area**

- Cleaned and televised Supplee Valley, Cooper Circle, Reservoir Road, and Waterford Development.

***Next 6 Months:***

**Ridley Creek Service Area**

- Perform an I&I investigation on the Ridley Creek Interceptor along the creek from MH R-213 to MH R-238 (Paoli Pike). The investigation should include smoke testing to locate inflow problems that may not be visually observable and CCTV inspection for infiltration in pipes.
- We recommend an inflow investigation of sewers upstream of MH R-638 (Ashcom portable meter) focused on manholes and other deficiencies that would allow overland stormwater runoff into the sewers as well as sump pumps, if this was not performed after the May 2015 Semi-Annual Sewer System Status Report.

**Chester Creek Service Area**

- We recommend I&I investigations in the tributary sewer systems that connect to the Chester Creek Interceptor between the Reservoir Road portable meter in Manhole C-036 and the Reservoir Road permanent meter.
- Televising the Mark Drive, Baldwin Drive, Katherine Lane, and Margaret Lane area.

**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 sewer systems which have been identified as needing rehabilitation, per the investigations mentioned above, should be rehabilitated.

***Previous 9 Months:***

**Ridley Creek Service Area**

- Replaced several sewer caps.
- Trap and cleanout repair in Bow Tree.
- Repaired a broken pipe at the Hunt Country Pump Station.

**Chester Creek Service Area**

- Repaired ten sewer lateral cleanout caps.
- Replaced a broken manhole casting and lid on Greenhill Road.
- Three point repairs and one excavated repair in Supplee Valley.
- Replaced relay switch at the Hershey's Mill Pump Station.
- Repaired a leak at the Reservoir Road Permanent Meter.
- Replaced manhole castings on Amstel Way.
- Cleared lateral blockages.
- Repaired a broken lateral in Supplee Valley.

***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.

5. **Action #5: Post-Rehabilitation Flow Metering**

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

***Previous 9 Months:***

Flows in the Chester Creek Service Area during the current period, from April 2015 through November 2015, have been relatively consistent averaging approximately 1,000,000 gpd. Flows decreased since the leak was repaired at the Reservoir Road permanent meter in July 2015; however, this was also a very dry period. We estimate that base flow decreased by approximately 100,000 gpd after July, which is likely due to both the repair and drier weather.

The average influent flow at the Ridley Creek Sewage Treatment Plant during the current period was approximately 375,000 gpd. Flows have been consistent and have followed rainfall trends. There were no major sewer repairs in the Ridley Creek Service Area during the current period.

***Next 6 Months:***

- Data from the portable and permanent meters will continue be reviewed to determine the effectiveness of any repairs in the Chester Creek and Ridley Creek Service Areas.

6. **Action #6: House Lateral Investigation Program**

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

***Previous 9 Months:***

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

***Next 6 Months:***

- Continue to inspect sanitary sewer cleanouts/vents in conjunction with the televising efforts performed under Action #2.
- Continue Township policy regarding replacement of cleanouts, vent caps, and laterals.
- Continue re-occupancy inspections at the sale of properties including looking for direct

inflow from building sump pumps.

- Repair of defective laterals and cleanouts by the Township for property owners to ensure that the work is done properly.

**7. Action #7: Reporting**

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

***Previous 9 Months:***

- Submitted Semi-Annual Sewer System Status #13 to the Municipal Authority on April 10, 2015.
- Submitted Semi-Annual Sewer System Status #13 (Updated) to the Municipal Authority on May 19, 2015.
- Submitted Temporary Metering Analysis update email to the Municipal Authority on October 20, 2015.

***Next 6 Months:***

- Prepare and submit the Semi-Annual Sewer System Status #15 to the Municipal Authority by June 30, 2015.

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

Sincerely,

**PENNONI ASSOCIATES INC.**



Michael J. Ellis, P.E.  
Authority Engineer

Enclosures: Figure 1

cc: Mark Miller, Public Works Director





**Pennoni**  
ENGINEERING & CONSTRUCTION, INC.  
CONSULTING ENGINEERS

THIS REPORT IS FOR  
OFFICIAL USE ONLY  
REPRESENTATION ONLY  
PREPARED FOR EAST  
GOSHEN TOWNSHIP  
CHESTER COUNTY, PENNSYLVANIA  
JANUARY 2016

# TOWNSHIP WASTEWATER FACILITIES

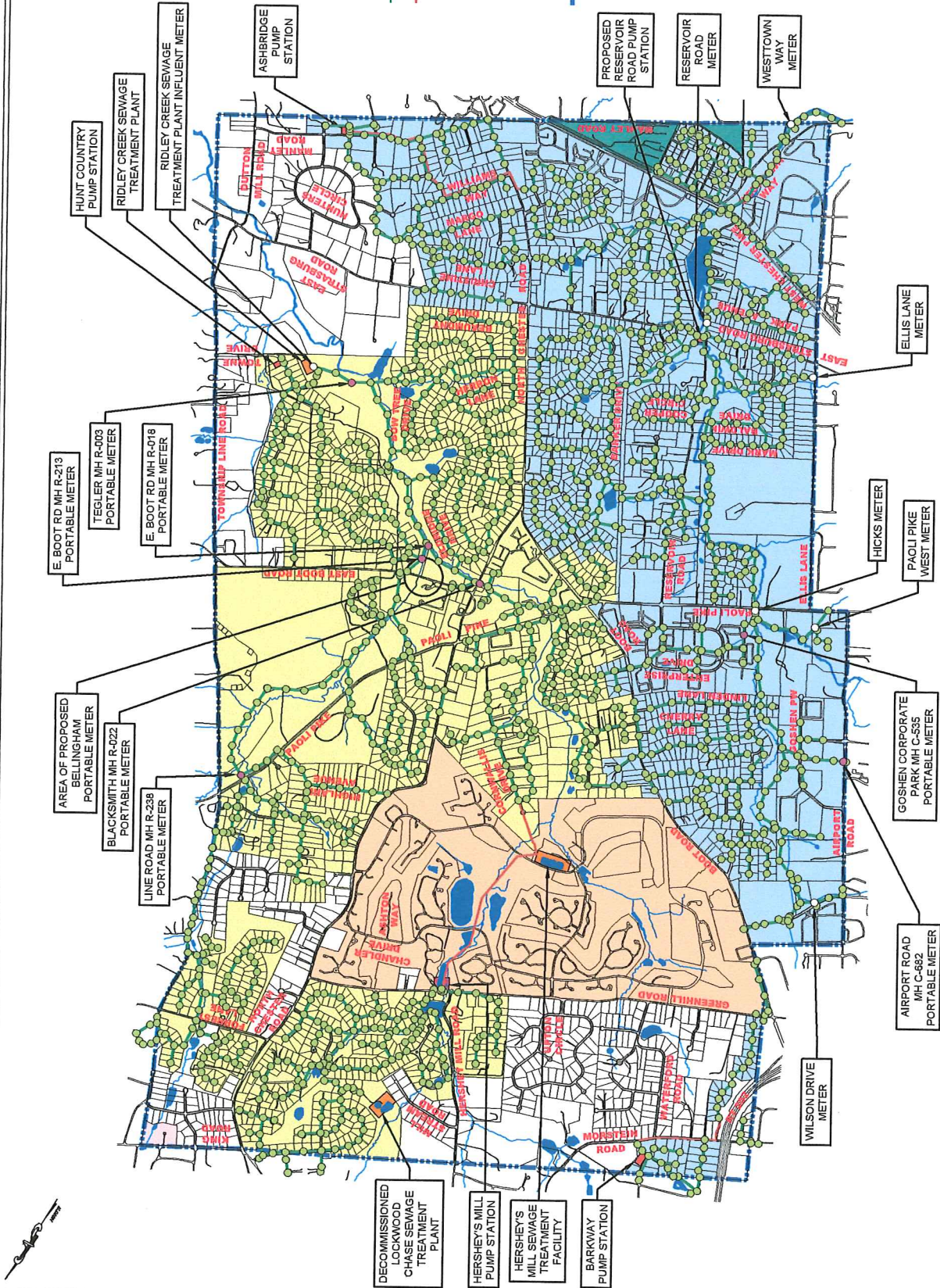
FIGURE #1:

EAST GOSHEN TOWNSHIP  
CHESTER COUNTY, PENNSYLVANIA

## LEGEND

- RIDLEY CREEK  
STP SERVICE  
AREA
- WESTTOWN  
SERVICE AREA
- HERSHEY'S MILL  
SERVICE AREA
- WEST GOSHEN  
SERVICE AREA
- EAST WHITELAND  
SERVICE AREA
- UNSEWERED  
AREAS
- PUMP STATION
- SEWAGE  
TREATMENT  
FACILITY
- SANITARY SEWER  
FORCEMAIN
- SANITARY  
MANHOLE
- PERMANENT  
WASTEWATER  
METER
- TEMPORARY  
METER LOCATION
- TOWNSHIP  
BOUNDARY

GRAPHIC SCALE  
1 inch = 2000 ft.







# The Authorities

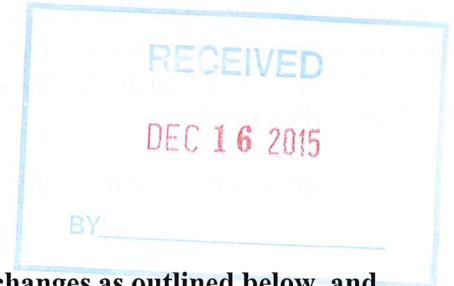
PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOCIATION

1000 North Front Street • Suite 401 • Wormleysburg, PA 17043 • 717.737.7655 • Fax 717.737.8431

Email: [info@municipalauthorities.org](mailto:info@municipalauthorities.org) Website: [www.municipalauthorities.org](http://www.municipalauthorities.org)

FY

**TO:** PMAA MEMBER AUTHORITIES  
**FROM:** DOUGLAS E. BILHEIMER, EXECUTIVE DIRECTOR  
**DATE:** DECEMBER 15, 2015  
**SUBJECT:** 2016 ROSTER SHEET



**We have enclosed our Roster Sheet for 2016. Please review this form, make changes as outlined below, and return the original corrected copy to the PMAA office as soon as possible.**

**Please Note:** This print-out may contain typographical errors. Please check all information very closely and correct as required. Print corrections legibly, using red or bright ink (no pencil). Strike out, or mark “change box” in each section and provide updated information. PLEASE BE ACCURATE. This information is essential for printing the 2017 Directory to assure correct addresses for mailings, and processing of membership dues.

## PAGE 1

### **Section 1: Company Information:**

Reflects company facts; name, address, phone, fax, e-mail/website, county, type of project, type of authority.

### **Section 2: Revenue Information:**

For **OPERATING Authorities** – Gross Revenues. Revise the gross revenue figure, and indicate the gross revenues for the authority’s last completed fiscal year.

For **LEASE-BACK Authorities** – Annual Lease Rentals – Revise the annual lease rental figure, and indicate the lease rental figure for the authority’s last completed fiscal year.

*If your authority is a COMBINATION Authority, with both Gross Revenues and Lease-Back Rentals, provide both figures in the appropriate spaces.*

### **Section 3: Authority Participates in these PMAA Programs:**

Verify all the PMAA programs your Authority currently participates in.

### **Section 4: Staff Information:**

Revise any changes in the number of employees and board members.

(over)

# Pennsylvania Municipal Authorities Association

1000 North Front Street, Suite 401

Wormleysburg, PA 17043

Tel: (717) 737-7655

Fax: (717) 737-8431

Email: Info@MunicipalAuthorities.org

## Membership Roster for 2016

### Company Information:

East Goshen

1580 Paoli Pi

West Chester,

Telephone: (6

E-mail: egtad

Website: ww

County: Chest

Type of Project

### Revenue Information

Please Provide

Gross Revenue

Fiscal Year End

Annual Lease Rental (If project is a Lease Back) \$878,024.36

Bonded Debt: \$10,662,000.00

Fiscal Year

correct? If not check box and make corrections in the space provided.

Change: ☐

Change: ☐

Change: ☒

Change: ☒

884,300

10,177,000

### The Authority Participates in these PMAA Programs:

Is this correct? If not, check box and make corrections in the space provided.

Life Insurance:

No

Change: ☐

Hospital Indemnity:

No

Change: ☐

Weekly Disability:

No

Change: ☐

Unemployment Compensation:

No

Change: ☐

### Staff Information:

Is this correct? If not, check box and make corrections in the space provided.

Number of Full Time Employees:

0

Change: ☐

Number of Part Time Employees:

0

Change: ☐

Number of Board Members:

5

Change: ☐

Number Covered by Collective Bargaining:

0

Change: ☐

## Pennsylvania Municipal Authorities Association

1000 North Front Street, Suite 401

Wormleysburg, PA 17043

Tel: (717) 737-7655

Fax: (717) 737-8431

Email: Info@MunicipalAuthorities.org

### Membership Roster for 2016

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*Is this information correct? If not, check box and make corrections or any additions on blank space provided after this section:*

- Change: ☐ Manager: Louis F. Smith, Jr. - 1580 Paoli Pike, West Chester, PA 19380
- Change: ☐ Director or Public Works: Mark S. Miller - 1580 Paoli Pike, West Chester, PA 19380
- Change: ☐ Solicitor: Gawthrop Greenwood, PC/ Patrick McKenna, Esq. - 17 East Gay Street, Suite 100, PO Box 562, West Chester, PA 19381-0562 Ph: (610) 696-8225
- Change: ☐ Auditor: Maillie LLP/ - C/O East Goshen Municipal Authority, 1580 Paoli Pike, West Chester, PA 19380 Ph: (610) 696-4353
- Change: ☐ Construct Engineer: Pennoni Associates Inc./ Michael Ellis - 121 Contental Drive, Suite 207, Newark, DE 19713 Ph: (302) 655-4451
- Change: ☐ Chair: Kevin Cummings - 1606 Williams Way, West Chester, PA 19380
- Change: ☐ Vice Chair: Dana Pizarro - 1602 Ivy Lane, West Chester, PA 19380
- Change: ☐ Treasurer: Francis X. Beck, Jr. - 1225 Foxglove Lane, West Chester, PA 19380
- Change: ☐ Asst/Sect Treas: Jack Yahraes - 911 Vista Drive, West Chester, PA 19380
- Change: ☐ Secretary: Ed McAssey - 1121 Merrifield Drive, West Chester, PA 19380

## Pennsylvania Municipal Authorities Association

1000 North Front Street, Suite 401

Wormleysburg, PA 17043

Tel: (717) 737-7655

Fax: (717) 737-8431

Email: Info@MunicipalAuthorities.org

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East Goshen Municipal Authority

ID: 212

### OPTIONAL EMAIL ADDRESSES FOR BOARD MEMBERS and ASSOCIATES

*To allow more timely contact of our members on time sensitive issues and information.*

Manager: Louis F. Smith, Jr. - 1580 Paoli Pike, West Chester, PA 19380

Email Address: \_\_\_\_\_

Director or Public Works: Mark S. Miller - 1580 Paoli Pike, West Chester, PA 19380

Email Address: \_\_\_\_\_

Solicitor: Gawthrop Greenwood, PC/ Patrick McKenna, Esq. - 17 East Gay Street, Suite 100, PO Box 562, West Chester, PA 19381-0562 Ph: (610) 696-8225

Email Address: \_\_\_\_\_

Auditor: Maillie LLP/ - C/O East Goshen Municipal Authority, 1580 Paoli Pike, West Chester, PA 19380 Ph: (610) 696-4353

Email Address: \_\_\_\_\_

Construct Engineer: Pennoni Associates Inc./ Michael Ellis - 121 Contental Drive, Suite 207, Newark, DE 19713 Ph: (302) 655-4451

Email Address: \_\_\_\_\_

Chair: Kevin Cummings - 1606 Williams Way, West Chester, PA 19380

Email Address: \_\_\_\_\_

Vice Chair: Dana Pizarro - 1602 Ivy Lane, West Chester, PA 19380

Email Address: \_\_\_\_\_

Treasurer: Francis X. Beck, Jr. - 1225 Foxglove Lane, West Chester, PA 19380

Email Address: \_\_\_\_\_

Asst/Sect Treas: Jack Yahraes - 911 Vista Drive, West Chester, PA 19380

Email Address: \_\_\_\_\_

Secretary: Ed McAssey - 1121 Merrifield Drive, West Chester, PA 19380

Email Address: \_\_\_\_\_