

EAST GOSHEN MUNICIPAL AUTHORITY

February 8, 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. January 11, 2016
5. APPROVAL OF INVOICES
 - a. Pennoni Invoice #673182 \$1,039.75
 - b. Pennoni Invoice #673187 \$2,778.75
 - c. Pennoni Invoice #673183 \$2,565.50
 - d. Pennoni Invoice #673184 \$725.75
 - e. Pennoni Invoice #673185 \$488.75
 - f. Pennoni Invoice #673186 \$872.25
 - g. Gawthrop Greenwood, #139997 \$400.00
5. LIAISON REPORTS
6. FINANCIAL REPORTS
 - a. January 2016 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
- a. Sewer System Monitoring Presentation (There will be a Power Point Presentation)
 - b. Update on West Goshen Capital Improvements
 - c. Maillie – Objective of an Audit
 - d. Semi-Annual Sewer System Status Report #14 - Pennoni
10. CAPACITY REQUESTS
11. ANY OTHER MATTER
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

February 3, 2016

To: Municipal Authority
From: Mark Miller
Re: January 2016 Monthly Report

Monthly Flows: The average daily flow to West Goshen was 821,000 gallons per day.

Meters: All meters were read on a daily basis

C.C. Collection: The pumping stations were visited on a daily basis. We experienced a pump failure at the Hershey Mill Pump Station. Pump number 2 was pulled while we were there we decided to pull pump #1 as well as they were due to be pulled for routine maintenance and were taken to Deckmens. We also had a problem in the control panel at the pump station the electronic rotating switch was not operating; we replaced the switch and put the station back in operation. The main seal on pump #2 failed which caused the pump to become inoperative. Both needed new cutters and top and bottom seals. Lenni Electric was in to perform routine maintenance at the pumping stations.

While performing routine cleaning of the sewer lines in White Chimneys we found over a dozen manholes that were deteriorating due to the hydrogen sulfide from the Ash Bridge pumping station. Mike Ellis and Matt inspected the manholes with Steve Biondi and me. Mike was going to check and see if Abel Recon was on the COSTARS Program; if that is the case we will get a cost from them to do the work. Abel Recon is the company that did the manhole demonstration last year in Fairway Village. We repaired several lateral stand pipes this month.

R.C. Collection: Pump Stations were visited on a daily basis we have been having an ongoing problem with excessive grease; we tried chemically treating it however that has not worked. We started this week vacuuming the

grease and will continue on set schedule. I hope to have the prices from Sealy Associates to upgrade the pump and rail system at the Hunt Country Pump Station for your meeting. John Laidley is currently going over the control panel that was saved from the Reserve Pump Station.

R.C. Plant:

Scott requested two UPS boxes from the filter feed control panels. Lenni Electric is replacing the Wall Pack lighting with LED fixtures. WE are also upgrading the fluorescent lighting with LED lighting. The heater in the screen was removed and repaired. The emergency generators were serviced this month we had to replace the batteries on the Detroit Generator.

Action Items:

Need your approval to have Mike Ellis prepare specifications to repair the Manholes in White Chimneys.

Lochwood Plant Closure:

Alarms:

We responded to 27 alarms for January.

PA One Calls:

We received 57 PA One calls January.



MEMORANDUM

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

FROM: Michael Ellis, P.E.
Authority Engineer

DATE: February 4, 2016

SUBJECT: Engineer's Report

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

- PADEP issued the permits for the Ridley Creek GP-5 "Utility Line Stream Crossings" and GP-8 "Temporary Road Crossings (across streams)" and for the pump station site floodplain filling work.
- We are awaiting PADEP response for the Chester Creek Small Projects Joint Permit for the pump station site and Chester Creek utility crossing.
- Williams-Transco and Sunoco have approved the petroleum pipeline crossings. We are still awaiting a response from PPL-IEC.
- We revised and resubmitted 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, to address PennDOT's initial comments. PennDOT has requested a field meeting at the site before performing the remainder of their review, and we are in the process of scheduling it.
- 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 February 12, 2016.
- The Water Quality Management Part II Permit application will be submitted to PADEP after the plans are revised to address CCCD's comments.
- We prepared a sanitary sewer easement exhibit and legal descriptions for 1636 Bow Tree Drive.

- The tentative schedule follows:

Estimated Date

- Submitted PADEP GP and JP Permit applications.....November 19, 2015
- Submit revised NPDES Permit application February 12, 2016
- Submit PADEP WQM Part II Permit application..... February 15, 2016
- PennDOT Permit issuance February-March 2016
- PADEP and CCCD Permit issuances April-May 2016

Semi-Annual I&I Reports

- We met with the Township Manager and Public Works Director and reviewed Semi-Annual Sewer System Status Report #14 on January 21, 2016. The report was revised thereafter and re-issued on February 4, 2016.

RCSTP and Pump Stations' O&M Plan

- We met with the Township Manager and Public Works Director and reviewed an outline of proposed content for the O&M Plan on January 21, 2016. We have proceeded with preparation of the Plan.

White Chimneys Manhole Rehabilitation

- We performed field observation of numerous manholes in the White Chimneys neighborhood that are downstream of the Ashbridge Pump Station force main discharge that are deteriorated from hydrogen sulfide. We evaluated manhole lining construction and contracting approaches and prepared a construction cost estimate. Recommendations, including a map, were forwarded to the Township.

Chapter 94 Reports

- We have begun to prepare the reports.



Monthly Operations Report: January 2016

Executive Summary

The Ridley Creek sewage treatment plant outfall 001 achieved compliance with the NPDES discharge permit during December 2015. Discharge to Applebrook was discontinued during December. 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 December 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 0.16 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 December 2015 eDMR. During the month, the final effluent total phosphorus concentration discharged ranged from 0.10 mg/L to 0.26 mg/L.

Table 1

December 2015 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD ₅		TSS		NH ₄ -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	1.22	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			3	11						
December 29, 2015	0.514	2.0	8.6	3	13	2.77	11.9	0.18	0.77	1	0.0000
December 30, 2015	0.393			1	3						
Average	0.355	2.2	6.5	4	11	1.122	3.91	0.16	0.48	6	0.7465
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	8.6	8	22	2.770	11.87	0.26	0.77	270	2.4314



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

Table 2

December 2015 - Influent Wastewater											
Design Basis	Flow	BOD ₅		TSS		NH ₄ -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	98.1	370	112	422	31.7	120	40.3	226	3.9	15
Average	0.468	182	686	119	450	36.0	136	51.0	176	8.9	34
Minimum	0.368	98	370	1	4	31.2	118	45.6	154	3.9	15
Maximum	0.672	315	1188	216	815	45.5	172	57.1	198	22.3	84

Table 3 presents the available Outfall 001 final effluent data for the month of January 2016. During January, the presence of foam conditions on the surface of the SBRs remained consistent with the previous month with foam concentrations ranging from 10% to 60% 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 January, 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

January 2016 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD₅		TSS		NH₄-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											
January 5, 2016	0.377	2.6	8.2	1	3	0.333	1.05	0.10	0.31	1	0.0000
January 7, 2016	0.338			2	6						
January 12, 2016	0.385	2.0	6.4	3	10	0.244	0.78	0.11	0.35	1	0.0000
January 14, 2016	0.358			2	6						
January 19, 2016	0.443	5.1	18.8	6	22	1.460	5.39	0.12	0.44	3	0.4771
January 21, 2016	0.365			4	12						
January 26, 2016	0.362										
Average	0.375	3.2	11.1	3	10	0.679	2.41	0.11	0.37	1	0.1590
Minimum	0.338	2.0	6.4	1	3	0.244	0.78	0.10	0.31	1	0.0000
Maximum	0.443	5.1	18.8	6	22	1.460	5.39	0.12	0.44	3	0.4771

The influent wastewater pollutant concentrations and loading entering the wastewater treatment facility remained within the design concentrations. 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 January 2016.



Table 4

January 2016 - Influent Wastewater											
Design Basis	Flow	BOD ₅		TSS		NH ₄ -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											
January 5, 2016	0.481	199	798	188	754	36.7	147	46.0	184	3.9	16
January 12, 2016	0.471	188	754	200	802	30.8	123	34.1	134	3.8	15
January 19, 2016	0.468	156	625	68	273	33.6	135	37.2	145	3.9	16
January 26, 2016	0.530										
Average	0.487	181	726	152	609	33.7	135	39.1	155	3.9	16
Minimum	0.468	156	625	68	273	30.8	123	34.1	134	3.8	15
Maximum	0.530	199	798	200	802	36.7	147	46.0	184	3.9	16

Sequencing batch reactors (SBRs) numbered 1, 3 and 4 were in service during December and January. 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 80.9 gpd to 72.1 gpd. Soda ash daily addition decreased from 426 lbs. per day to 406 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: January 2016

Sludge Dewatering Summary	
Gallons of sludge dewatered	264,953
Number of dumpsters	4

*Sixteen (16) days of centrifuge operation



Flow data:

January 2016			
Flow Meter Location	Total Volume for Month, MG	Average Daily Flow, gpd	Daily Maximum Flow, gpd
Influent Wastewater to Screening Building*	14.450	466,128	580,250
Influent Wastewater to SBRs	14.391	464,231	536,768
Internal Recycle	0.215	6,947	42,836
Treated Effluent to Disc Filters	13.744	443,353	533,120
Final Effluent Discharge	12.107	390,548	837,000*
Applebrook Golf Course	No Discharge	No Discharge	No Discharge

*The high final effluent flow is attributed to debris at the v-notch weir

Chemical Usage:

January 2016		
Chemical	Daily Average	Total Monthly
Soda Ash	406	12,600
Aluminum Sulfate solution	72.1	2,236
Polymer (centrifuge)	0.84	13.44

*twenty two (22) days of centrifuge operation

During January, 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 January was 13.28 feet and the level at the end of the month was 12.0 feet. The average total solids concentration was 0.70%. Zero gallons of supernatant were decanted during the month. 100 pounds of soda ash were added.

Sludge holding tank No. 2 was in service. The level at the beginning of the month was 4.22 feet and the level at the end was 7.68. The average total solids concentration was 0.70%. 100 pounds of soda ash were added. Zero gallons of supernatant were decanted.



Significant Storm/Hydraulic Loading Events

During January, there were three (3) 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 January 9th resulting in 1.22 inches of rainfall and January 22nd and 23rd resulting in 12 inches of snowfall measured on both days for a total of 24 inches. Plant operations were adjusted to manage the precipitation to prevent exceedances of the permitted discharge limitations for Outfall 001.

Minor Repairs and Preventative Maintenance

January 23rd: Disc filter number 2, Allen Bradley display blank. The back wash valve and pump control lights on and function in hand mode. The filter controls were found not functioning in automatic mode. Filter is accepting and filtering flow. Checked inside control panel, looks like power to only half of the panel. Checked fuses, and breakers, all looked normal.

January 26th: Both filters were rewired to bypass the failed uninterrupted power supplies (UPS's). These power supply breakers were determined to be located in the SBR control room, and are labeled backwards. Both filters were drained and cleaned Filter #2 before returning to service since it hadn't been operating correctly.

The sampler at the influent building was returned to service. The extension cord going to the sampler is under a large pile of snow and found to be damaged.

January 28th: A UV ballast failed which resulted in an alarm. Both UV light banks were temporarily operated on-line in "Hand" mode until the ballast can safely replaced, some UV lamps.

January 31st: Cleaned auger sprayer nozzles.

Replaced UV Ballast and lamps

Draft
EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY
MEETING MINUTES
January 11, 2016

The East Goshen Township Municipal Authority held their regular public meeting on Monday, January 11, 2016 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 & Recreation Board</i>
<i>HC – Historical Commission</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
<i>I&I – Inflow & Infiltration</i>	<i>SBR – Sequencing Batch Reactor</i>
<i>LCSTP – Lockwood Chase Sewer Treatment Plant</i>	<i>SSO – Sanitary System Overflow</i>
	<i>WAS – Waste Activated Sludge</i>

Call to Order & Pledge of Allegiance

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. There was also a moment of silence for authority member Fran Beck, who passed away in December. He served on the Authority for over thirty years.

CHAIRMAN'S/MEMBERS REPORTS

1. Jack reported that he attended the West Goshen meeting. They have a “to do” list that needs to be prioritized. These meetings are now being held at the Township Building. Ed will attend the next meeting.
2. Dana filled in for Kevin at the ABC annual meeting on Saturday, January 9, 2016.
3. Reorganization for 2016 - Jack nominated the following for officers in 2016:

Chairman – Dana

Vice Chairman – Ed

Secretary – Jack

Treasurer – Kevin

Sec/Treas – Phil Mayer

Ed seconded the nominations. The vote was unanimous.

4. Dana mentioned that Phil Mayer has been appointed as the new member of the Authority.

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 – 780.000

December Precipitation – 5.02

1 C.C. Collection: The pumping stations were visited on a daily basis. All stations had
2 preventive maintenance performed by Lenni Electric. John Laidly was out to perform
3 routine maintenance to the electronics. We replaced three back-up floats at Barkway
4 Station.

5 We televised several laterals to check for infiltration. We also replaced several broken
6 vent stacks.

7 We added additional conduit at the Hershey Mill Station for the larger pump cords.

8 The Public Works Crew replaced three manhole castings that we found taking in inflow.

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

13 R.C. Plant: Routine maintenance was performed at the plant. All buildings were
14 cleaned from top to bottom. Floors were prepared for sealing.

15 Alarms: We responded to 6 alarms for December.

16 PA One Calls: We received 65 PA One calls for December.
17

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

19 Mike Ellis provided the following report:

20 Invoices: Invoices with summaries are provided under separate cover.

21 Ridley Creek Sewage Treatment Plant (RCSTP):

22 No activity since the last report.

23 Reservoir Rd Pump Station:

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

28 The Township Codes Department reviewed the plans and provided a few comments that
29 we have addressed.

30 Williams-Transco and Sunoco have approved the petroleum pipeline crossing. We are
31 awaiting a response from PPL-IEC.

32 The PennDOT Highway Occupancy Permit application for force main construction along
33 and across E. Strasburg Road and Rt. 352, including detour route plans for road closures, was
34 submitted on December 22, 2015.

35 We met with the Chester County Conservation District (CCCD) on December 22, 2015 to
36 discuss their initial comments on the NPDES Permit application. We are editing the plans and
37 permit application documents to address the comments, and we expect to submit the revised
38 documents to CCCD by January 15, 2016.

39 The Water Quality Management Part II Permit application will be submitted to PADEP
40 after the plans are revised to address CCCD's comments.

41 The tentative schedule follows:

42 Submitted PADEP GP and JP Permit application	November 19, 2015
43 Submitted NPDES permit application	December 7, 2015
44 Submitted PennDOT HOP Application for force main	December 22, 2015
45 Submit revised NPDES Permit Application	January 15, 2016
46 Submit PADEP WQM Part II Permit application	January 20, 2016

PennDOT Permit issuance
PADEP & CCD Permit issuances

January 2016
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.

3. Big Fish Environmental Services – Scott's report showed that the Ridley Creek sewage treatment plant outfall 001 achieved compliance with the NPDES discharge permit during November 2015. Discharge to Applebrook 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.

During December there were 2 storm events resulting in daily precipitation amount equal to or greater than 0.5 inches measured during a 24 hour period. These events occurred on December 1st and 19th 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 Outfalls 001.

Minor repairs and preventative maintenance were:

Replace UV lamps on Bank #1, module 2, lamps 2,6 module 3 lamp2, 6 module 4, and lamp 3, 7.
Replace UV lamps on Bank #2, module 2, lamp 1, 5, module 4, lamp 2, 6 and 3, 7 module 5 lamp 1,4.

Troubleshoot disc filter #2, valve #3.

Rewire limit switch on disc filter #3, valve #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 supplies alum to the disc filters.

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

Approval of Minutes

Jack moved to accept the minutes of December 14, 2015 as amended. Ed seconded the motion. The motion passed unanimously.

Approval of Invoices

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

a. Pennoni #668503 \$ 1,063.75

b. Pennoni #668504 \$ 16,747.75

Jack seconded the motion. The motion passed unanimously. Mike pointed out that on the back of the report is a list of items paid & invoice summary.

Dana seconded the motion. The motion passed unanimously.

1
2
3 **Liaison Reports**

4 Board of Supervisors – Carmen reported that Senya is the Chairman, Marty Vice Chairman,
5 Chuck Police, and Carmen Fire Marshall. The Board started planning for the Bi-centennial in
6 2017.
7

8 **Financial Reports**

9 Jon Altshul provided the following written report:

10 In December, the Municipal Authority recorded \$20,112 in revenues (primarily due to a \$20,000
11 transfer from the Sewer Operating Fund) and \$47,515 in expenses, for a negative variance of -
12 \$27,403. Expenses included \$8,052 for the quarterly administrative charge-back, \$27,409 for the
13 required 28% of the debt service on the 1998 debt and \$11,016 for Reservoir Road Pup Station
14 engineering. As of December 31st, the fund balance was \$1,461,276, of which \$1,415,878 is in
15 the main construction account.
16

17 **New Business**

18 1. Dana mentioned that at the ABC meeting, a resident of Indian Hill told him that after
19 10 years his septic system is failing. However, they still don't want to join the sewer system
20 because of the estimated cost of \$30K. Rick mentioned that there are approx. 530 lots still on
21 septic in the township.

22 2. Semi-Annual Sewer System Status Report #14 – Mike gave a summary of his report.
23 They are suggesting replacement of portable pumps with permanent. Jack complimented Mike
24 on the report.

25 3. The 2016 Roster Sheet for the PMAA will be updated. Rick verified for Dana that
26 the Authority members are members of PMAA and can attend meetings at the members' rate.
27

28 **Adjournment**

29 There being no further business, Jack moved to adjourn the meeting. Kevin seconded the
30 motion. The motion passed unanimously. The meeting was adjourned at 8:00 pm. The next
31 meeting will be held on Monday, February 8, 2016 at 7:00 pm.
32

33 Respectfully submitted,
34

35
36 Ruth Kiefer
37 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 # : 673182
Invoice Date : 01/21/2016
Project : EGMA1501
Project Name : 2015 General Services

For Services Rendered through: 1/17/2016

FINAL INVOICE

Prepared for and attended December MA meeting, assisted Township staff with public notices for smoke testing, evaluated piping connection approach from new grinder pumps to gravity mains for use in Township, and updated Township-wide sewer system maps for semi-annual sewer system status reports and other documents.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	1,039.75
Expense :	0.00
Phase Total :	1,039.75

Amount Due This Invoice

\$1,039.75

Fee :	12,000.00
Prior Billings :	10,514.00
Current Billings :	1,039.75
Total Billings :	11,553.75

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	4.25	115.00	488.75
Senior Engineering Technician	1.50	85.00	127.50
Engineering Technician II	5.50	77.00	423.50
Labor Total:	11.25		1,039.75

Total Phase : **** -- Professional Services

Labor :	\$1,039.75
Expense :	\$0.00

Total Project : EGMA1501 -- 2015 General Services

Labor :	\$1,039.75
Expense :	\$0.00

OK RS 2-5-16

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

East Goshen Municipal Authority
EGMA1501 Invoice Summary
Invoice Date 1/21/2016

Project:	EGMA1501		
Pennoni Job No.:	2015 General Services		
Invoice No:	673182		
Invoice Period:	12/14/2015	to	1/17/2016
Initial Authorization:	\$ 12,000.00	Date:	1/21/2016
Contract Amount:	\$ 12,000.00		
Previously Invoiced:	\$ 10,514.00		
Current Invoice:	\$ 1,039.75		
Invoiced to Date (\$):	\$ 11,553.75		
Invoiced to Date (%):	96%		
Remaining Budget (\$):	\$ 446.25		
Remaining Budget (%):	4%		

Budget by Phase:

	2015 General
Phase Name:	Services
Phase Budget:	\$ 12,000.00
Previously Invoiced:	\$ 10,514.00
Current Invoice:	\$ 1,039.75
Invoiced to Date (\$):	\$ 11,553.75
Invoiced to Date (%):	96%
Remaining Budget (\$):	\$ 446.25
Remaining Budget (%):	4%

Comments: FINAL INVOICE

Prepared for and attended December MA meeting, assisted Township staff with public notices for smoke testing, evaluated piping connection approach from new grinder pumps to gravity mains for use in Township, and updated Township-wide sewer system maps for semi-annual sewer system status reports and other documents.



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 # : 673187
Invoice Date : 01/21/2016
Project : EGMA1502
Project Name : 2015 Semi-Annual I&I Reports

For Services Rendered through: 1/17/2016

FINAL INVOICE

Analyzed sewer system meter data from April 2015 - December 2015; and prepared and submitted Semi-Annual Sewer System Status Report #14.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	2,778.75
Expense :	0.00
Phase Total :	2,778.75

Amount Due This Invoice

\$2,778.75

Fee :	10,500.00
Prior Billings :	7,685.00
Current Billings :	2,778.75
Total Billings :	10,463.75

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	9.75	115.00	1,121.25
Associate Engineer	19.50	85.00	1,657.50
Labor Total:	29.25		2,778.75

Total Phase : **** -- Professional Services

Labor :	\$2,778.75
Expense :	\$0.00

Total Project : EGMA1502 -- 2015 Semi-Annual I&I Reports

Labor :	\$2,778.75
Expense :	\$0.00

OK RS 2-5-16

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

East Goshen Municipal Authority
EGMA1502 Invoice Summary
Invoice Date 1/21/2016

Project: EGMA1502
Pennoni Job No.: 2015 Semi-Annual I&I Reports
Invoice No: 673187
Invoice Period: 11/9/2015 to 1/17/2016
Initial Authorization: \$ 10,500.00 **Date:** 1/21/2016
Contract Amount: \$ 10,500.00
Previously Invoiced: \$ 7,685.00
Current Invoice: \$ 2,778.75
Invoiced to Date (\$): \$ 10,463.75
Invoiced to Date (%): 100%
Remaining Budget (\$): \$ 36.25
Remaining Budget (%): 0%

Budget by Phase:

Phase Name: 2015 Semi-Annual I&I Reports
Phase Budget: \$ 10,500.00
Previously Invoiced: \$ 7,685.00
Current Invoice: \$ 2,778.75
Invoiced to Date (\$): \$ 10,463.75
Invoiced to Date (%): 100%
Remaining Budget (\$): \$ 36.25
Remaining Budget (%): 0%

Comments: FINAL INVOICE

Analyzed sewer system meter data from April 2015 - December 2015; and prepared and submitted Semi-Annual Sewer System Status Report #14.



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 # : 673183
Invoice Date : 01/21/2016
Project : EGMA1504
Project Name : Reservoir Rd PS Design &
Permitting

For Services Rendered through: 1/17/2016

Phase 11 - Edited plans and specifications to address comments from Township Codes and Public Works Departments.

Phase 12 - Attended NPDES Permit Application comment review meeting at CCCD; initiated plan and application revisions to address CCCD's comments; finalized and submitted PennDOT Highway Occupancy Permit application including detour route plans for force main construction along E. Strasburg Rd and across N. Chester Rd.; and addressed floodplain site elevation comments from Township Codes Department.

Phase : 11 -- Final Design

Total Phase : 11 -- Final Design

Labor :	289.25
Expense :	0.00
Phase Total :	289.25

Phase : 12 -- Permitting

Total Phase : 12 -- Permitting

Labor :	2,276.25
Expense :	0.00
Phase Total :	2,276.25

Amount Due This Invoice

\$2,565.50

Fee :	136,316.25
Prior Billings :	129,891.75
Current Billings :	2,565.50
Total Billings :	132,457.25

OK RS 2-5-16

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

Labor

<u>Class</u>	<u>Hours/ Units</u>	<u>Rate</u>	<u>Amount</u>
Authority Engineer	1.25	115.00	143.75
Project Engineer	1.50	97.00	145.50
Labor Total:	2.75		289.25

Total Phase : 11 -- Final Design

Labor : \$289.25

Expense : \$0.00

Phase : 12 -- Permitting

Labor

<u>Class</u>	<u>Hours/ Units</u>	<u>Rate</u>	<u>Amount</u>
Authority Engineer	6.50	115.00	747.50
Project Engineer	6.25	97.00	606.25
Staff Engineer	10.25	90.00	922.50
Labor Total:	23.00		2,276.25

Total Phase : 12 -- Permitting

Labor : \$2,276.25

Expense : \$0.00

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

Labor : \$2,565.50

Expense : \$0.00

East Goshen Municipal Authority
EGMA1504 Invoice Summary
Invoice Date 1/21/2016

Project: EGMA1504
Pennoni Job No.: Reservoir Rd PS Design & Permitting
Invoice No: 673183
Invoice Period: 12/14/2015 to 1/17/2016
Initial Authorization: \$ 167,120.00 **Date:** 1/21/2016
Contract Amount: \$ 167,120.00
Previously Invoiced: \$ 151,839.50
Current Invoice: \$ 2,565.50
Invoiced to Date (\$): \$ 154,405.00
Invoiced to Date (%): 92%
Remaining Budget (\$): \$ 12,715.00
Remaining Budget (%): 8%

Budget by Phase:

Phase Name:	Final Design	Phase 11
Phase Budget:	\$ 61,500.00	
Previously Invoiced:	\$ 56,459.25	
Current Invoice:	\$ 289.25	
Invoiced to Date (\$):	\$ 56,748.50	
Invoiced to Date (%):	92%	
Remaining Budget (\$):	\$ 4,751.50	
Remaining Budget (%):	8%	

Comments: Phase 11 - Edited plans and specifications to address comments from Township Codes and Public Works Departments.

East Goshen Municipal Authority
EGMA1504 Invoice Summary
Invoice Date 1/21/2016

Project: EGMA1504
Pennoni Job No.: Reservoir Rd PS Design & Permitting
Invoice No: 673183
Invoice Period: 12/14/2015 to 1/17/2016
Initial Authorization: \$ 167,120.00 **Date:** 1/21/2016
Contract Amount: \$ 167,120.00
Previously Invoiced: \$ 151,839.50
Current Invoice: \$ 2,565.50
Invoiced to Date (\$): \$ 154,405.00
Invoiced to Date (%): 92%
Remaining Budget (\$): \$ 12,715.00
Remaining Budget (%): 8%

Budget by Phase:

Phase Name:	Permitting	Phase 12
Phase Budget:	\$ 28,610.50	
Previously Invoiced:	\$ 22,390.00	
Current Invoice:	\$ 2,276.25	
Invoiced to Date (\$):	\$ 24,666.25	
Invoiced to Date (%):	86%	
Remaining Budget (\$):	\$ 3,944.25	
Remaining Budget (%):	14%	

Comments: Phase 12 - Attended NPDES Permit Application comment review meeting at CCCD; initiated plan and application revisions to address CCCD's comments; finalized and submitted PennDOT Highway Occupancy Permit application including detour route plans for force main construction along E. Strasburg Rd and across N. Chester Rd.; and addressed floodplain site elevation comments from Township Codes Department.

Reservoir Road Pump Station Design & Permitting

INVOICE SUMMARY

For Services Rendered through: 1/17/2016

Task No.	Activity	Contract Amount*	Invoiced Effort thru 1/17/2016	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	\$56,748.50	\$4,751.50	8%	No
12	Permitting	\$28,610.50	\$24,666.25	\$3,944.25	14%	No
TOTAL		\$167,120.00	\$154,404.25	\$12,715.75	8%	

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



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 # : 673184
Invoice Date : 01/21/2016
Project : EGMA1505
Project Name : RCSTP and Pump Station O&M Manual

For Services Rendered through: 1/17/2016

Initial preparation of O&M Plan.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor : 725.75
Expense : 0.00
Phase Total : 725.75

Amount Due This Invoice

Fee : 12,500.00
Prior Billings : 0.00
Current Billings : 725.75
Total Billings : 725.75

\$725.75

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	1.25	115.00	143.75
Project Engineer	6.00	97.00	582.00
Labor Total:	7.25		725.75

Total Phase : **** -- Professional Services

Labor : \$725.75
Expense : \$0.00

Total Project : EGMA1505 -- RCSTP and Pump Station O&M Manual

Labor : \$725.75
Expense : \$0.00

OLC 125 2-5-16

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

East Goshen Municipal Authority
EGMA1505 Invoice Summary
Invoice Date 01/21/2016

Project: EGMA1505
Pennoni Job No.: RCSTP & Pump Station O&M Manual
Invoice No: 673184
Invoice Period: NTP to 1/17/2016
Initial Authorization: \$ 12,500.00 **Date:** 1/21/2016
Contract Amount: \$ 12,500.00
Previously Invoiced: \$ -
Current Invoice: \$ 725.75
Invoiced to Date (\$): \$ 725.75
Invoiced to Date (%): 6%
Remaining Budget (\$): \$ 11,774.25
Remaining Budget (%): 94%

Budget by Phase:

Phase Name: RCSTP & Pump Station O&M Manual
Phase Budget: \$ 12,500.00
Previously Invoiced: \$ -
Current Invoice: \$ 725.75
Invoiced to Date (\$): \$ 725.75
Invoiced to Date (%): 6%
Remaining Budget (\$): \$ 11,774.25
Remaining Budget (%): 94%

Comments: Initial preparation of O&M Plan.



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 # : 673185
Invoice Date : 01/21/2016
Project : EGMA1601
Project Name : 2016 General Services

For Services Rendered through: 1/17/2016

Prepared January's Engineer's Report, prepared for and attended January MA meeting, and evaluated construction contracting alternatives for interior repairs to deteriorated sanitary manholes.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	488.75
Expense :	0.00
Phase Total :	488.75

Amount Due This Invoice

488.75

Fee :	12,300.00
Prior Billings :	0.00
Current Billings :	488.75
Total Billings :	488.75

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	4.25	115.00	488.75
Labor Total:	4.25		488.75

Total Phase : **** -- Professional Services

Labor :	\$488.75
Expense :	\$0.00

Total Project : EGMA1601 -- 2016 General Services

Labor :	\$488.75
Expense :	\$0.00

OK RS 2-5-16

East Goshen Municipal Authority
EGMA1601 Invoice Summary
Invoice Date 01/21/2016

Project:	EGMA1601		
Pennonni Job No.:	2016 General Services		
Invoice No:	673185		
Invoice Period:	NTP	to	1/17/2016
Initial Authorization:	\$	12,300.00	Date: 1/21/2016
Contract Amount:	\$	12,300.00	
Previously Invoiced:	\$	-	
Current Invoice:	\$	488.75	
Invoiced to Date (\$):	\$	488.75	
Invoiced to Date (%):		4%	
Remaining Budget (\$):	\$	11,811.25	
Remaining Budget (%):		96%	

Budget by Phase:

Phase Name:	2016 General Services		
Phase Budget:	\$	12,300.00	
Previously Invoiced:	\$	-	
Current Invoice:	\$	488.75	
Invoiced to Date (\$):	\$	488.75	
Invoiced to Date (%):		4%	
Remaining Budget (\$):	\$	11,811.25	
Remaining Budget (%):		96%	

Comments: Prepared January's Engineer's Report, prepared for and attended January MA meeting, and evaluated construction contracting alternatives for interior repairs to deteriorated sanitary manholes.



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 # : 673186
Invoice Date : 01/21/2016
Project : EGMA1603
Project Name : 2015 Chapter 94 Reports

For Services Rendered through: 1/17/2016

Initial preparation of Chapter 94 Reports.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor : 872.25
Expense : 0.00
Phase Total : 872.25

Amount Due This Invoice

\$872.25

Fee : 15,000.00
Prior Billings : 0.00
Current Billings : 872.25
Total Billings : 872.25

Phase : **** -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	4.00	115.00	460.00
Project Engineer	4.25	97.00	412.25
Labor Total:	8.25		872.25

Total Phase : **** -- Professional Services

Labor : \$872.25
Expense : \$0.00

Total Project : EGMA1603 -- 2015 Chapter 94 Reports

Labor : \$872.25
Expense : \$0.00

OK TJS 2-5-16

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

East Goshen Municipal Authority
EGMA1603 Invoice Summary
Invoice Date 01/21/2016

Project: EGMA1603
Pennoni Job No.: 2015 Chapter 94 Reports
Invoice No: 673186
Invoice Period: NTP to 1/17/2016
Initial Authorization: \$ 15,000.00 **Date:** 1/21/2016
Contract Amount: \$ 15,000.00
Previously Invoiced: \$ -
Current Invoice: \$ 872.75
Invoiced to Date (\$): \$ 872.75
Invoiced to Date (%): 6%
Remaining Budget (\$): \$ 14,127.25
Remaining Budget (%): 94%

Budget by Phase:

Phase Name: 2015 Chapter 94 Reports
Phase Budget: \$ 15,000.00
Previously Invoiced: \$ -
Current Invoice: \$ 872.75
Invoiced to Date (\$): \$ 872.75
Invoiced to Date (%): 6%
Remaining Budget (\$): \$ 14,127.25
Remaining Budget (%): 94%

Comments: Initial preparation of 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
01/11/2016
Client No: 6604-001R
Invoice No. 139997

General Authority Services

Fees

		Hours		
12/14/2015				
	JKW	Review materials in advance of meeting; Attend meeting.	2.00	
		For Current Services Rendered	2.00	400.00
Recapitulation				
	<u>Timekeeper</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
	Jessica K. Wiesak	2.00	\$200.00	\$400.00
	Previous Balance			\$780.00
	Total Current Charges			400.00
12/22/2015	DE Payment			-780.00
	Balance Due			<u>\$400.00</u>

OK TO PAY
Rick 1-15-16

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 January Financial Reports
Date: February 4, 2016

In January, the Municipal Authority recorded \$5,115 in revenues (primarily from tap-in fees for Colonial Lane) and \$2,042 in expenses, for a positive variance of \$3,073. As of January 31st, the fund balance was \$1,464,350, of which \$1,415,986 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
January 2016

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
MUNICIPAL AUTHORITY BEGINNING FUND BALANCE			1,461,276.18	
RCSTP BUDGET				
REVENUE				
INTEREST EARNED - RCSTP EXPANSION	07341 1020	1,500.00	110.59	110.59
GRANT REVENUE	07392 0800	0.00	0.00	0.00
TOTAL REVENUE		1,500.00	110.59	110.59
EXPENSES				
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
TOTAL EXPENSES		0.00	0.00	0.00
RCSTP NET RESULT		1,500.00	110.59	110.59

OPERATING BUDGET

EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE
WEST CHESTER, PA
Municipal Authority
January 2016

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
REVENUE				
INTEREST EARNINGS	07341 1000	10.00	0.43	0.43
C.C. TAPPING FEES	07364 1100	4,000.00	0.00	0.00
R.C.TAPPING FEES	07364 1110	4,000.00	5,004.00	5,004.00
CONNECTION FEES - SEWER	07364 1130	0.00	0.00	0.00
MISCELLANEOUS REVENUE	07380 1000	0.00	0.00	0.00
TRANSFER FROM SEWER OPERATING	07392 0500	93,832.00	0.00	0.00
TOTAL REVENUE		101,842.00	5,004.43	5,004.43
EXPENSES				
ADMINISTRATIVE WAGES	07424 1400	0.00	0.00	0.00
MISCELLANEOUS EXPENSE	07424 3000	3,000.00	1,641.62	1,641.62
MUNIC.AUTH.-AUDITING	07424 3110	9,500.00	0.00	0.00
ENGINEERING SERVICES	07424 3130	38,500.00	0.00	0.00
LEGAL SERVICES	07424 3140	9,000.00	400.00	400.00
M.C.-DVRFA-DEBT SERVICE	07471 1000	24,920.00	0.00	0.00
M.C.-DVRFA-INTEREST PAYMN	07472 1000	3,172.00	0.00	0.00
M.C.-DVRFA-INTEREST PAYMN	07472 1010	0.00	0.00	0.00
TOTAL EXPENSES		88,092.00	2,041.62	2,041.62
OPERATING NET RESULT		13,750.00	2,962.81	2,962.81

EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE
WEST CHESTER, PA
Municipal Authority
January 2016

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
CAPITAL BUDGET				
REVENUE				
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
TOTAL REVENUE		0.00	0.00	0.00
EXPENSES				
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	0.00	0.00	0.00
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000	0.00	0.00	0.00
ASBSTOS CONCRETE ENGINEERING	07429 3130	25,000.00	0.00	0.00
DIVERSION PROJ. - LEGAL	07429 3166	0.00	0.00	0.00
TOTAL EXPENSES		25,000.00	0.00	0.00
CAPITAL NET RESULT		(25,000.00)	0.00	0.00
MUNICIPAL AUTHORITY ENDING FUND BALANCE		1,464,349.58		

East Goshen Township General Ledger

Report Date 02/02/16

GL Transaction Details

PAGE 1

MGRP18 run by BRIAN

4 : 14 PM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000		INTEREST EARNINGS			0.00				
	1601 JE	51240		0.43		02/01/16	INTEREST		INTEREST EARNED JANUARY 2016 07 FUND
07341-1000	****	*** *****	0.00	0.43	-0.43				
07341-1020		INTEREST EARNED - RCSTP EXPANSION			0.00				
				110.59		02/01/16	INTEREST		INTEREST EARNED JANUARY 2016 07 FUND
07341-1020	****	*** *****	0.00	110.59	-110.59				
07364-1110		R.C.TAPPING FEES			0.00				
	CR	51204		5,004.00		01/28/16	1247	7875 1	SUNNY RIDGE FARMS LLC
07364-1110	****	*** *****	0.00	5,004.00	-5,004.00				
07424-3000		MISCELLANEOUS EXPENSE			0.00				
	CD	50894	978.00			12/17/15	3004	2132	PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOC 2016 ACTIVE MEMBERSHIP DUES
		51002	163.62			12/17/15	3005	2967	SAFEGUARD CHECK ORDER FEE
		51028	500.00			12/17/15	3006	2737	COMMONWEALTH OF PA NPDES PERMITS -CHAP.92A 2016 PERMIT# PA0050504
07424-3000	****	*** *****	1,641.62	0.00	1,641.62				
07424-3140		LEGAL SERVICES			0.00				
		51149	400.00			12/17/15	3007	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICES 12/14/15 - GEN.AU
07424-3140	****	*** *****	400.00	0.00	400.00				
Grand Total			2,041.62	5,115.02	-3,073.40				

Memo

East Goshen Township

Date: February 5, 2016
To: Municipal Authority
From: Rick Smith, Township Manager
Re: West Goshen Sewer Authority

On Wednesday, February 3, 2016 Mark Miller, Jon Altshul and I attended a meeting at West Goshen Township regarding proposed capital improvements to the West Goshen Sewer Treatment Plant (WGSTP). Also in attendance were representatives from West Whiteland and Westtown Townships since they also have sewage treated at WGSTP.

Attached is a copy of the status report that they provided. Josh Fox of HRG noted that the cost estimates include a 25% contingency (which will be reduced as the estimates are refined) and that they will be doing life cycle cost analysis as part of the process.

Also attached is a worksheet Jon prepared that estimates what our share of the costs would be assuming 20%.

Note: Since we have 1 MGD of the reserved capacity in the WGSTP in its current configuration (6 MGD) we would be responsible for 16.67% of the costs. However, some of the components at the WGSTP were constructed as part of the 1977 expansion when the plant was expanded from 2 MGD to 4.5 MGD, and our 1 MGD would represent 22.2% of those components. Accordingly, we used 20% for now.

Cc: Board of Supervisors with enclosures

Proposed WGT Sewer Improvements--CCSTP Only, 2/4/16

	2016	2017	2018	2019	2020	Total
Grit System	1,421,000					1,421,000
Headworks	362,000					362,000
Misc Improvements & Studies	545,000					545,000
Generator	995,000					995,000
Digester		2,242,000				2,242,000
BFP Replacement			1,738,000			1,738,000
Clarifier Rehab	54,600		839,000	536,000	660,000	2,089,600
Aeration Basin		214,000				214,000
Total	3,377,600	2,456,000	2,577,000	536,000	660,000	9,606,600
EGT's <u>estimated share</u> (20%)	675,520	491,200	515,400	107,200	132,000	1,921,320
EGT's <u>estimated share</u> (20%), excluding 25% contingency	540,416	392,960	412,320	85,760	105,600	1,537,056



Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

WEST GOSHEN TOWNSHIP

2015 WASTEWATER TREATMENT AND PUMPING FACILITIES CAPITAL IMPROVEMENT PLAN STATUS REPORT

February 3, 2016



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

1.0 EXECUTIVE SUMMARY

In order to provide a proactive approach to identifying necessary improvements to the Wastewater Treatment Plant (WWTP) and Wastewater Pumping Stations (Pump Stations) and to allow proper budgeting for implementation of improvements, West Goshen Township (Township) has authorized preparation of this five (5) year Capital Improvement Plan (CIP).

Herbert, Rowland & Grubic, Inc. (HRG) has prepared the CIP based on existing record documents including available Record Drawings, GIS Mapping, historic maintenance records, site visits, interviews with Township Staff, consultants, and contractors, and other records provided by the Township.

The primary intent of the CIP is to identify and prioritize capital projects to maintain, replace, improve, or upgrade wastewater treatment and pumping facilities to be implemented within the next five years. The CIP provides the Township with a systematic approach of managing the wastewater treatment and pumping facility assets, providing for the investigation and design of improvements identified as priority prior to implementing other "downstream" or complimentary improvements that may be affected by the prioritized improvements. This systematic approach allows for adjustments to priorities and/or estimates based on additional information received as the program progresses and more details have been obtained regarding the facilities.

Because the results of the dispute on the pending effluent limits based on the Total Maximum Daily Load (TMDL) of Total Phosphorus (TP) for Goose Creek is not yet known, major capital improvements for unit processes that impact TP removal should be delayed until the results of the dispute are known. It should be noted; however, that proper planning should continue while awaiting the results of the dispute. We recommend that the Township proceed with the completion of process modelling for the WWTP. This model would be developed in coordination with the Operations Staff at the WWTP to review the operations and treatment of each unit process and the effect of pending TP limits. Once completed, costs should be prepared for capital improvements associated with TP removal. Side streams such as WAS and filtrate would also be evaluated in the process model.

A summary of the capital improvements proposed for the next five (5) years is included in Table 8-1. Detailed information regarding each of the proposed capital improvements can be found in the corresponding sections of the Report.

The opinions of probable costs are for preliminary planning purposes only and were developed based upon available data at the time of this report. They are intended to provide an order or magnitude of total construction cost for budgeting purposes. Each estimate includes estimates for mobilization, bonding, and a 25% contingency. It should be noted that costs may be reduced through combining like improvements into a single project or contract. As individual studies or designs are prepared, costs included in the CIP may increase or decrease based upon further definition of project scope and design criteria.

1.1 INITIAL ASSESSMENT

At the request of Township Staff, HRG completed an initial assessment of the WWTP on October 15, 2015 and presented the findings to the Township Manager and Public Works Director on October 16, 2015, to the Board of Supervisors on October 28, 2015, and to the Authority on November 4, 2015. The initial assessment was a 6-hour walk through site visit of the WWTP focusing on areas identified by the Township Staff as being of the greatest concern.

A letter grade was given to each major treatment components based on the conditions identified to include observed maintenance practices, safety, operability, and general condition and age. This letter grading was subjective based on the opinions of the licensed operator and engineer completing the assessment.

This CIP further refines the original assessment and provides additional recommendations for the Township and Authority's consideration.

1.2 NEEDS AND DRIVERS

Planning periods for WWTP equipment is typically projected at 20-years; however, use, purpose, and preventative maintenance, checks, and services influence actual equipment lifecycles. Some equipment and treatment processes easily outlast their projected 20-year lifespans with minimum maintenance, while other equipment has significantly reduced lifecycles even under the best circumstances.

This CIP was requested to be completed by the Township Staff and Board of Supervisors due to identification of a lack of general maintenance, capital improvements, safety equipment and standards, and the pending TMDL nutrient limits. The focus of the CIP is intended to address the areas identified with the worst ratings during the initial site visit completed on October 15, 2015 by HRG.

1.3 ACKNOWLEDGEMENTS

HRG would like to thank Casey LaLonde, Township Manager; Dave Woodward, Public Works Director; Dennis Michael; Michael Moffa, Chief Operator; Jimmy Leon; Township Staff; and Max Stoner, P.E., Glace Associates for their assistance in the preparation of this CIP.

The CIP was prepared by R. Ed Spayd, P.E., Matt Cichy, P.E., Justin Mendinsky, P.E., Michael Fegley, P.E., Eric Boyer, P.E., and Jennifer Miller, P.E. with quality assurance provided by Joshua T. Fox, P.E. prior to issuance.

1.4 AUTHORITY'S PROPOSED CAPITAL EXPENDITURE SCHEDULE

HRG met with Max Stoner, of Glace Associates on November 17, 2015 to review the West Goshen Sewer Authority's Proposed Capital Expenditure Schedule (CES), last updated in August 2014.

The CES is primarily broken into three (3) major components:

- A. Wastewater Treatment Plant
- B. Pumping Stations
- C. Collections System

With each major component further broken down into three (3) distinct planning periods:

- A. 1 – 5 year Schedule
- B. 6 – 10 Year Schedule
- C. 11 – 15 Year Schedule

This information, along with additional supporting details provided by Glace Associates, was used as a guideline for the development of this CIP, in that, each of the major components identified in the Authority's CES was evaluated. It should be noted, however; that this CIP does not directly evaluate or address proposed capital improvements in the collection and conveyance system outside of the pumping stations. This portion of the Authority's system will be evaluated and presented in a separate Report.

Work that has already been undertaken and completed by the Authority in their 1 – 5 year planning period included the following:

- 1. Replace Gas Boiler in Operations Building (Item h.)
- 2. Evaluate switch gears/transformers at all pumping stations (Item e.)

Work that has already been started by the Authority in their 6 – 10 year planning period includes:

- 1. Evaluate/Replace Primary Transformer at WWTP (Item d.)

2.0 RECOMMENDATIONS

The following recommendations were developed and presented in the respective sections of the CIP and reviewed with the Township Operations Staff for compliance with continued operations activities as well as preference for new equipment and processes:

HEADWORKS/GRIT REMOVAL SYSTEM:

The existing grit removal system is non-functional and because it is undersized for the existing flows, it is highly improbable retrofit and/or minor modifications as originally proposed in the Authority's CES will yield satisfactory grit removal, especially at peak flows.

As a result, we recommend that the Authority consider moving forward with design of replacement of the existing aerated grit chamber with either a Eutel Headcell retrofit or new installation of a Eutek Headcell or Grit King outside of the existing building.

Because of the close proximity in cost between these alternatives, they should be further evaluated during preliminary design and a decision made based on the revised estimated costs. For purposes of budgeting, Alternative 3A, retrofit of the existing grit removal system with installation of the Eutek Headcell was included in the CIP schedule. It should be noted that these alternatives were identified to be the most technically feasible because they are expected to not alter the existing hydraulic profile of the WWTP, eliminating the need for additional pumping or effects to other processes.

The Township Staff, during review of the Draft CIP identified that the existing influent screen/washer/compactor is in need of significant repairs. Refurbishment of the screen is estimated to cost approximately \$58,000. A new smaller screen and conveyor to be used as a redundant screen or as a by-pass screen during high flows is estimated to cost an additional \$159,000.

The estimated cost is within the contingency factor used for the Grit Removal System and Headworks Improvements. It is expected that this equipment will be further evaluated during design of the grit removal system and headworks improvements.

SOLIDS HANDLING FACILITIES:

We have prepared proposed improvements and estimated costs for the existing anaerobic digesters and associated control building as well as refurbishment or replacement of the existing belt filter presses and ancillary equipment for the Authority and Township's review.

Because of the existing operational issues associated with the anaerobic digesters, we have provided alternatives for aerobic digestion to include:

1. M-TAD (w/out covers)
2. M-TAD (w/covers)
3. Traditional Aerobic Digestion
4. ATAD

After discussion with the Operations Staff, we have included the estimated construction costs for conversion of the Anaerobic Digesters to the M-TAD system with covers for inclusion in the CIP. We have also included the estimated costs for replacement of the belt filter presses with the volute press(s). The high cost was used for planning purposes; however, the size and number of units should be evaluated in detail during pre-design activities following completion of the process model.

ELECTRICAL IMPROVEMENTS:

Due to the age of the service entrance power distribution equipment and the Township Staff's concerns of equipment failure, we propose replacing the service transformer, MCC-1, emergency generator, and automatic transfer switch in 2016. In addition, we recommend that a portable generator connection be installed to serve as a redundant back-up should the emergency generator fail to operate.

We also recommend preparing Arc Flash Studies and labelling all of the existing electrical equipment with arc flash hazards so that Operations Staff are made aware of the dangers and have the proper personal protective equipment to maintain the equipment. It is recommended that any new electrical equipment have the study completed by the manufacturer as a component of the product submittal process. The estimated cost to complete these studies (to include those for the pump stations) were included in the General Operations/Studies costs.

TMDL COMPLIANCE:

Because the impacts of the TMDL and the future TP effluent limit are not yet known, the effects to the existing WWTP and the necessary capital improvements necessary to meet the new effluent limit cannot be estimated to any certain degree of accuracy. To prepare for the upcoming TP limit, as well as to prepare for future regulatory changes and improve operations at the existing WWTP, we recommend that the Township complete a comprehensive process model of the WWTP. This process model should include a robust sampling plan to identify treatment efficiencies at each unit process, develop a mass balance of the WWTP, model the impacts of all side streams and recycles, model chemical addition points, and model potential improvements in the CIP.

AERATION BASIN IMPROVEMENTS:

Proposed Aeration Basin Improvements include replacement of the handrail (where damaged or removed), repair of surface concrete (where damaged), replacement of the air piping from the blower building to the aeration tanks (commonly leaking), installation of VFDs for the existing blowers, and installation of DO probes in each aeration basin.

We may recommend additional improvements or modifications following completion of the WWTP process model.

CLARIFIERS:

Based on discussions with the Operations Staff, we recommend that the concrete cracking in the Primary Clarifiers (specifically Primary Clarifier No. 3) be repaired in 2016 as the tank is actively leaking. The estimated cost for construction is \$54,600 and is included in 2016 proposed costs. We recommend that the clarifier drive and balance of the scraper arm assembly be fully inspected and maintenance be completed while the clarifier is down for maintenance.

Replacement of the clarifier drives, mechanisms, scraper assemblies, and addition of current density baffles proposed for 2018, 2019, and 2020 should be re-evaluated following completion of the WWTP process model.

PUMP STATIONS:

All ten (10) pump stations were evaluated and prioritized based on existing capacity, age, condition, safety, operations, and maintenance concerns. Although some pump stations are in worse condition than the ones proposed to be upgraded first, the fact that the pump stations are at their permitted capacity requires that upgrades be completed in combination with inflow and infiltration reduction efforts in the collection system.

We recommend the following pump stations be upgraded/improvements made in the next five years:

1. Woodcrest (Downing Avenue) Pump Station
2. Ellis Lane Pump Station
3. Trinity Drive Pump Station
4. Taylor Run Pump Station
5. Montgomery Avenue Pump Station

We recommend the following Pump Station be upgraded/improvements made 2021 (year 6):

6. Spruce Avenue Pump Station

Because of the extended timeframe to complete the improvements/upgrades at each of the ten (10) stations, the Township Staff has requested that the following improvements be made at each of the pump stations in 2016:

- Manual Transfer Switch and receptacle for a towable emergency generator for redundant back-up power should the aged emergency generators fail
- Forcemain by-pass pump connections for by-pass pumping operations should the pumps fail. It should be noted that the Township has several towable Godwin by-pass pumps available for use.

In order to keep on-schedule and have the proposed improvements completed in 2016, we have recommended to the Authority to proceed with permitting and design activities for the Headworks facility (and grit system improvements), electrical service, and generator replacement improvements as soon as possible.

Table 8-1 Estimated Construction Cost Opinions

		2016 Expenditure	2017 Expenditure	2018 Expenditure	2019 Expenditure	2020 Expenditure	2021 Expenditure
1	Grit System Replacement WWTP	\$1,421,000					
2	Headworks Building Improvements WWTP	\$362,000					
3	General Operations / Studies* WWTP	\$545,000					
4	Generator Replacement WWTP	\$995,000					
5	Digester Improvements WWTP		\$2,242,000				
6	BFP Replacement / Upgrades WWTP			\$1,738,000			
7	Clarifier Rehabilitation WWTP	\$54,600		\$839,000	\$536,000	\$660,000	
8	Aeration Basin Improvements WWTP		\$214,000				
9	PS 10: Woodcrest (Downing Ave.) Pump Stations	\$513,000					
10	PS 6: Ellis Lane Pump Stations		\$468,000				
11	PS 2: Trinity Drive Pump Stations			\$879,000			
12	PS 11: Taylor Run Pump Stations				\$925,000		
13	PS 1: Montgomery Avenue Pump Stations					\$319,000	
14	PS 3: Spruce Avenue Pump Stations						\$388,000
15	PS 1 – PS 17: Force Main By-pass Pump Connections	\$773,000					
TOTAL		\$4,663,600	\$2,924,000	\$3,456,000	\$1,461,000	\$979,000	\$388,000

* Costs include Intermediate Pump Station replacement pump, influent flow meter, WWTP Process Model, Digester Evaluation, emergency biogas piping & sediment trap replacement, provisions for a portable generator at the WWTP & Pump Stations, Arc Flash Study/Evaluation at the WWTP & Pump Stations, and miscellaneous improvements throughout the WWTP (25% of proposed improvements)

3.0 – COLLECTION SYSTEM IMPROVEMENTS AND ASSOCIATED COSTS

The Collection System CIP was developed to achieve a goal of improving sanitary sewer pipe each year in alignment with the Township's paving schedule. Table 7-1 describes the approximate footage of work proposed to be completed each year over the next four (4) paving seasons.

Table 7-1 Sanitary Sewer System Yearly Total Linear Feet of Improvements

2017 Paving Season	13,688
2018 Paving Season	19,684
2019 Paving Season	16,457
2020 Paving Season	14,811

The estimated project costs are conceptual in nature and developed based upon GIS mapping and are intended strictly for planning purposes to provide an order of magnitude of total future project costs for budgeting purposes.

Table 7-2 presents the estimated project cost estimates based on 2015 dollars for each recommended project. These costs should be updated once preliminary design is performed and a detailed project scope is defined for each project.

Table 7-2 Estimated Project Cost Opinions

		2016 Expenditure	2017 Expenditure	2018 Expenditure	2019 Expenditure	2020 Expenditure**
1	Sewers in Area of 2017 Paving Schedule	\$1,885,000.00	-	-	-	-
2*	Sewers in Area of 2017 Paving Schedule Alternative Cost Addition	\$212,800.00	-	-	-	-
3	Sewers in Area of 2018 Paving Schedule	-	\$2,495,000.00	-	-	-
4*	Sewers in Area of 2018 Paving Schedule Alternative Cost Addition	-	\$624,400.00	-	-	-
5	Sewers in Area of 2019 Paving Schedule	-	-	\$2,151,000.00	-	-
6*	Sewers in Area of 2019 Paving Schedule Alternative Cost Addition	-	-	\$389,200.00	-	-
7	Sewers in Area of 2020 Paving Schedule	-	-	-	\$2,078,000.00	-
8*	Sewers in Area of 2020 Paving Schedule Alternative Cost Addition	-	-	-	\$361,200.00	-
TOTAL		\$2,098,000.00	\$3,120,000.00	\$2,541,000.00	\$2,440,000.00	-

* Alternative Cost Addition is the cost to install the lateral liner – shorty. While this is a necessary improvement, if funds are not available to complete the work in the expenditure year proposed, this work can be completed at a later date since it requires trenchless methods.

** 2020 Expenditure will be developed once additional investigations have occurred or the 2021 paving schedule has been developed.

Partners

Robert L. Caruso
James M. Powers
D. Scott Detar
Edward J. Furman
Robert L. Boland
Donald J. Pierce
Richard A. Flanagan IV
Craig S. Springer
Robert C. Hershey, Jr.
Gregory J. Shank
Laurie E. Harvey
William Breslawski, Jr.
Edward Fronczkowski

January 18, 2016

To the Members of the Board
c/o Mr. Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6107

You have requested that we audit the statement of net position of the East Goshen Municipal Authority as of December 31, 2015, and the related statements of revenues, expenses and changes in net position and cash flows for the year then ended and the related notes to the financial statements, which collectively comprise the East Goshen Municipal Authority's basic financial statements. We are pleased to confirm our acceptance and our understanding of this audit engagement by means of this letter. Our audit will be conducted with the objective of our expressing an opinion on the financial statements.

Accounting principles generally accepted in the United States of America require that management's discussion and analysis and budgetary comparison information be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the required supplementary information (RSI) in accordance with auditing standards generally accepted in the United States of America. These limited procedures will consist primarily of inquiries of management regarding their methods of measurement and presentation, and comparing the information for consistency with management's responses to our inquiries. We will not express an opinion or provide any form of assurance on the RSI. The following RSI is required by accounting principles generally accepted in the United States of America. This RSI will be subjected to certain limited procedures but will not be audited:

1. Management's Discussion and Analysis

AUDITOR RESPONSIBILITIES

The Objective of an Audit

The objective of our audit is the expression of an opinion as to whether your basic financial statements are fairly presented, in all material respects, in conformity with generally accepted accounting principles. Our audit will be conducted in accordance with auditing standards generally accepted in the United States of America and will include tests of the accounting records and other procedures we consider necessary to enable us to express such an opinion.

To the Members of the Board
c/o Mr. Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority

- 2 -

January 18, 2016

We cannot provide assurance that an unmodified opinion will be expressed. Circumstances may arise in which it is necessary for us to modify our opinion or add emphasis-of-matter or other-matter paragraphs. If our opinion on the financial statements is other than unmodified, we will discuss the reasons with you in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed an opinion, we may decline to express an opinion or to issue a report as a result of this engagement.

General Audit Procedures

We will conduct our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the basic financial statements are free from material misstatement. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to error, fraudulent financial reporting, misappropriation of assets, or violations of laws, governmental regulations, grant agreements, or contractual agreements. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

Internal Control Audit Procedures

Because of the inherent limitations of an audit, together with the inherent limitations of internal control, an unavoidable risk that some material misstatements may not be detected exists, even though the audit is properly planned and performed in accordance with GAAS.

In making our risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. However, we will communicate to you in writing concerning any significant deficiencies or material weaknesses in internal control relevant to the audit of the financial statements that we have identified during the audit.

Compliance with Laws and Regulations

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the East Goshen Municipal Authority's compliance with the provisions of applicable laws, regulations, contracts and agreements. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion.

REPORTING

We will issue a written report upon completion of our audit of the East Goshen Municipal Authority's basic financial statements. Our report will be addressed to the governing body of the East Goshen Municipal Authority. We cannot provide assurance that an unmodified opinion will be expressed. Circumstances may arise in which it is necessary for us to modify our opinion, add an emphasis-of-matter or other-matter paragraph(s), or withdraw from the engagement.

To the Members of the Board
c/o Mr. Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority

- 3 -

January 18, 2016

MANAGEMENT RESPONSIBILITIES

Our audit will be conducted on the basis that management and those charged with governance acknowledge and understand that they have responsibility:

1. For the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America;
2. For the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to error; fraudulent financial reporting, misappropriation of assets, or violations of laws, governmental regulations, grant agreements, or contractual agreements;
3. To provide us with:
 - a. Access to all information of which management is aware that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation and other matters;
 - b. Additional information that we may request from management for the purpose of the audit; and
 - c. Unrestricted access to persons within the entity from whom we determine it necessary to obtain audit evidence.
4. For including the auditors' report in any document containing financial statements that indicates that such financial statements have been audited by the entity's auditor;
5. For identifying and ensuring that the entity complies with the laws and regulations applicable to its activities; and
6. For adjusting the financial statements to correct material misstatements and confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the current year under audit are immaterial, both individually and in the aggregate, to the financial statements as a whole.

We will perform the following nonattest services:

1. Preparation of financial statements based on your trial balances.
2. Preparation of the Commonwealth of Pennsylvania Department of Community and Economic Development Annual Report of Municipal Authorities.

With respect to any nonattest services we perform, the East Goshen Municipal Authority's management is responsible for (a) making all management decisions and performing all management functions; (b) assigning a competent individual to oversee the services; (c) evaluating the adequacy of the services performed; (d) evaluating and accepting responsibility for the results of the services performed and (e) establishing and maintaining internal controls, including monitoring ongoing activities.



To the Members of the Board
c/o Mr. Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority

- 4 -

January 18, 2016

As part of our audit process, we will request from management and those charged with governance, written confirmation concerning representations made to us in connection with the audit.

OTHER

We understand that your employees will prepare all confirmations we request and will locate any documents or invoices selected by us for testing.

If you intend to publish or otherwise reproduce the financial statements and make reference to our firm, you agree to provide us with printers' proofs or masters for our review and approval before printing. You also agree to provide us with a copy of the final reproduced material for our approval before it is distributed.

During the course of the engagement, we may communicate with you or your personnel via fax or e-mail, and you should be aware that communication in those mediums contains a risk of misdirected or intercepted communications.

Edward Fronczkowski, CPA, is the engagement partner for the audit services specified in this letter. His responsibilities include supervising Maillie LLP's services performed as part of this engagement and signing or authorizing another qualified firm representative to sign the audit report.

Our fees are based on the amount of time required by the individuals assigned to the engagement, plus direct out-of-pocket expenses. Invoices will be rendered as work progresses and expenses are incurred and are payable upon presentation. We estimate that our fee for the audit will be \$9,500. We will notify you immediately of any circumstances we encounter that could significantly affect this initial fee estimate.

In accordance with our firm policies, work may be suspended if your account becomes 30 days or more overdue and will not be resumed until your account is paid in full. If we elect to terminate our services for nonpayment, our engagement will be deemed to have been completed upon written notification of termination, even if we have not completed our report. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination.

During the course of the audit, we may observe opportunities for economy in, or improved controls over, your operations. We will bring such matters to the attention of the appropriate level of management, either orally or in writing.

The audit documentation for this engagement is the property of Maillie LLP and constitutes confidential information. However, we may be requested to make certain audit documentation available to various regulators pursuant to authority given to them by law or regulation, or to peer reviewers. If requested, access to such audit documentation will be provided under the supervision of Maillie LLP's personnel. Furthermore, upon request, we may provide copies of selected audit documentation to various regulators. The various regulators may intend, or decide, to distribute the copies of information contained therein to others, including other governmental agencies.

To the Members of the Board
c/o Mr. Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority

- 5 -

January 18, 2016

At the conclusion of our audit engagement, we will communicate to those charged with governance the following significant findings from the audit:

- Our view about the qualitative aspects of the entity's significant accounting practices;
- Significant difficulties, if any, encountered during the audit;
- Uncorrected misstatements, other than those we believe are trivial, if any;
- Disagreements with management, if any;
- Other findings or issues, if any, arising from the audit that are, in our professional judgment, significant and relevant to those charged with governance regarding their oversight of the financial reporting process;
- Material, corrected misstatements that were brought to the attention of management as a result of our audit procedures;
- Representations we requested from management;
- Management's consultations with other accountants, if any; and
- Significant issues, if any, arising from the audit that were discussed, or the subject of correspondence, with management.

Please sign and return the attached copy of this letter to indicate your acknowledgment of, and agreement with, the arrangements for our audit of the financial statements including our respective responsibilities.

We appreciate the opportunity to be your financial statement auditors and look forward to working with you and your staff.

Respectfully,

MAILLIE LLP



Edward Fronczkowski

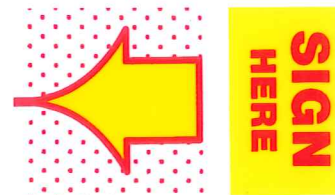
RESPONSE:

This letter correctly sets forth our understanding.

Acknowledged and agreed on behalf of the **East Goshen Municipal Authority** by:

Title: _____

Date: _____





Christiana Executive Campus
121 Continental Drive, Suite 207
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January 7, 2016
Updated February 4, 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. We also recommend manhole lids with open pickholes throughout Hershey's Mill Estates be replaced with watertight lids.

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, replace manhole lids in Hershey's Mill Estates, 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. In addition, portable meters should be installed near the Paoli Pike West and Ellis Lane permanent meters to further evaluate if I&I from West Goshen is the source of high base flows in that system. Three 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.**

The inflow at this location may be from manholes with open pickholes and other sewer deficiencies in Hershey's Mill Estates, so this portable meter should be relocated to MH R-068 to meters flows from that neighborhood.

- 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.**

This meter can be removed.

- 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</u> <u>gpm (gpd)</u>	<u>Average Base Flow</u> <u>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 can be removed since a permanent meter is proposed at this location.

- 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 Tegler R-003.
- Install a portable meter at MH R-068 to monitor flows from Hershey's Mill Estates.
- Install portable meters (two total) at or upstream of the Paoli Pike West and Ellis Lane permanent meters to monitor flows from West Goshen.
- 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 three new permanent meters in the Ridley Creek Collection System: one at or near MH R-214, one at or near MH R-022, and one at or near MH R-239.
- 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.
- Replace manhole frames and lids in Hershey's Mill Estates and White Chimneys.

- Line interior of numerous deteriorated manholes in White Chimneys.

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



THIS REPORT IS FOR
CONSULTANTS USE ONLY
REPRESENTATION ONLY
PREPARED FOR EAST
CHESTER COUNTY IN
PENNSYLVANIA
FEBRUARY 2016

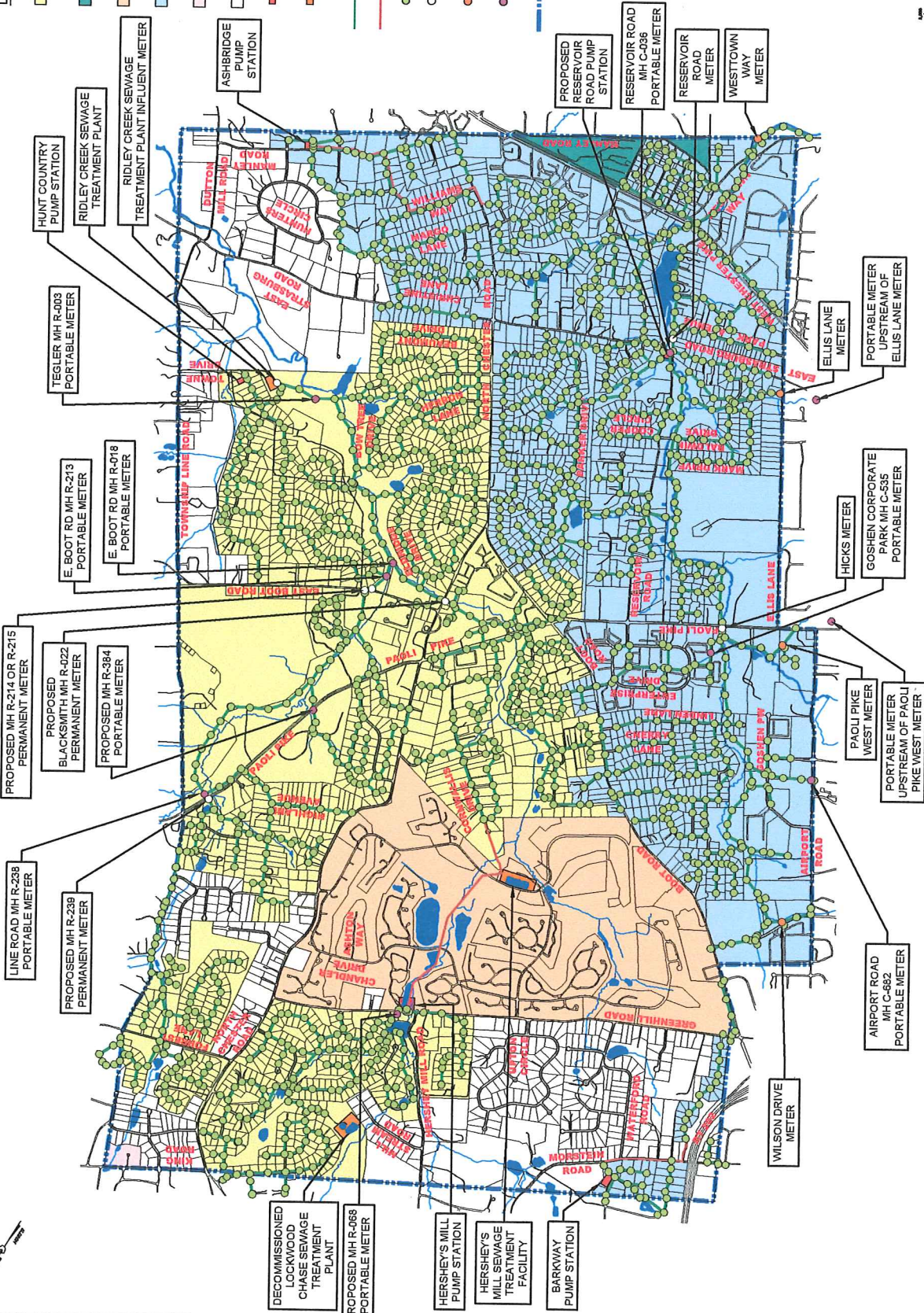
FIGURE #1:
TOWNSHIP WASTEWATER FACILITIES

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
- UN-SEWERED
AREAS
- PUMP STATION
- SEWAGE
TREATMENT
FACILITY
- SANITARY SEWER
FORCEMAIN
- SANITARY MANHOLE
- PERMANENT METER
WITHOUT SATELLITE
- PERMANENT METER
WITH SATELLITE
- TEMPORARY METER
LOCATION
- TOWNSHIP
BOUNDARY

GRAPHIC SCALE



2016 PMAA Board Member Training

FYI

Central Location

Thursday, March 3

Radisson Hotel Harrisburg
1150 Camp Hill Bypass
Camp Hill, PA 17011

East Location

Thursday, March 10

Holiday Inn
Allentown – I-78
7736 Adrienne Drive
Breinigsville, PA 18031
(Fogelsville Exit on I-78)

West Location

Thursday, March 17

Doubletree by Hilton
Pittsburgh, Cranberry
910 Sheraton Drive
Mars, PA 16046

Schedule: 8:30 – Registration

9:00 – 1:00 – Program

1:00 – Luncheon

Are you a “new” Authority Board Member appointed this year or in recent years? Are you a veteran Board Member ready for a refresher on the wide landscape of responsibilities in which you have been entrusted? Perhaps you are an Authority professional or consultant guiding your Board through these responsibilities.

These training sessions are specially designed to provide a broad overview of key powers, duties, and responsibilities for Authority Board Members. Session presentations will include:

- **Government Relations Update.** What are the latest laws, regulations, and legislative proposals impacting your Authority’s operations, implementation issues and costs?
- **Municipality/Authority Relations.** You have been appointed to lead an autonomous entity charged with providing a vital service to the community. Sometimes other Municipal needs may conflict with Authority responsibilities. Learn where Municipality/Authority cooperation can be mutually beneficial, and where gray areas may lead to complicating issues.
- **Authority Finance.** From day to day cash management to various financing options, Board Members must stay abreast of financial practices and fiscal responsibilities of your Authority’s operations.
- **Understanding the Key Elements of Public Official Ethics.** Attorneys from the Ethics Commission will provide an overview of ethical standards and recent Ethics Commission rulings impacting Municipal Authority officials.
- **Municipal Solicitors’ Panel.** Local solicitors will address attendees on various issues and topics including the Municipality Authorities Act, developer agreements, and the Open Records Act. Attendees are urged to come prepared with questions for the panel. This segment of the program has been approved for PA CLE and municipal solicitors are encouraged to attend.

**See other side for
registration form.**

Pennsylvania Municipal Authorities Association

1000 North Front Street, Suite 401, Wormleysburg, PA 17043

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