WEST GOSHEN SEWER AUTHORITY

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March 8, 2017

Board of Supervisors
West Goshen Township
1025 Paoli Pike
West Chester, Pennsylvania 19382

Dear West Goshen Board of Supervisors:

The West Goshen Sewer Authority has embarked on a major capital improvement project recently approving a $20 million/20 year bond issuance through the Royal Bank of Canada Capital Markets. The Authority Engineer, Herbert, Rowland & Grubic (HRG) has prepared a description of the Capital Projects which is attached. The Sewer Authority hired outside professionals creating a Bond Team to review available methods and resources for raising capital that included bank loans and bond issuances. Outside Counsel experienced in these matters was also retained and made part of the Bond team.

It is important to note that the West Goshen share of the borrowing is 60.675% of the total amount. The remaining 39.325% is born by the other four townships that utilize the West Goshen Sewer Plant (Westtown, West Whiteland, Thornbury and East Goshen).

In order to receive the most favorable rates for the bond issuance West Goshen Township is being asked to guarantee repayment of the bond issuance. In addition a new lease must be approved between the Authority and West Goshen Township and amendments made to the inter-municipal agreements with the four partner Townships.

This evening I respectfully request that the West Goshen Board of Supervisors begin the process for the two Ordinances necessary for completion of the bond issuance. The first Ordinance is for the Bond Guaranty. The second Ordinance is for approval of the Lease with the Sewer Authority and amendments to the inter-municipal agreements. We respectfully request that steps be taken so these Ordinances can be voted on during your regular April 2017 Supervisors Board meeting.

Questions arose at the February 8, 2017 Board of Supervisors meeting asking how the estimate changed from $13 million in January of 2016 to greater than $20 million. The revised estimate is closer to $22.3 million. This amount does not include repairs to the collection system – that is the pipes that bring product from each bathroom in the Township to the Sewer Plant. This difference was caused in larger part by: a more thorough inspection of the facilities subsequent to January 2016; the inclusion of equipment and enhanced chemical addition to meet the requirements imposed by the federal Environmental Protection Agency regarding reduction of

phosphorous in the effluent discharge from the Plant into Goose Creek (CoMag system); replacement of the grit removal system in the Headworks facility; replacement of the Anaerobic Digesters; rebuild of clarifier #3; and improvements in several of the ten pump stations. Some of the costs are set forth below. The HRG report contains more information.

Anaerobic Digesters	$4.3 million
Headworks	$3.4 million
Enhanced Chemical Addition	$582,000
CoMag system	$3.3 million
Pump Stations	$915,000
Emergency Generator Replacement	$705,000
Clarifier #3 Rebuild	$363,700
Sanitary Sewer Repair 2016	$537,000
Sanitary Sewer Repair 2017	$1.6 million

Plainly stated, the sewer system in West Goshen is old and has exceeded its useful life. Plans to improve the capital structure of the plant were not in place 15 months ago when HRG was asked to conduct an inspection of the plant and when I was appointed to the Sewer Authority by the Board of Supervisors. Over the ensuing 8 months significant and deliberate discussions took place regarding the physical condition of the plant and appropriate measures to embark on needed improvements. The former engineer, Glace Associates, was replaced in June 2016 when HRG was voted in to provide engineering services for the Sewer Authority and Plant. With the resignation of two Authority members in June and July 2016 and the appointment of two new Authority members, the West Goshen Sewer Authority reorganized at the August 3, 2016 regular meeting.

Last year the Authority directed HRG to continue a thorough inspection of the entire sewer plant and collection system aided by a new and rigorous schedule for camera inspection of the sewer lines.

The inspections have revealed the following:

Primary Clarifier #3 had several actively leaking structural cracks that were worsening, thereby requiring a significant demolition and rebuild. The initial design and construction of this clarifier (circa 1975) was flawed. The rebuild was necessary to prevent structural failure and discharge of product into Goose Creek.

The sanitary sewer system is full of highly corrosive hydrogen sulfide gas that causes deterioration of the concrete manholes. The new inspection schedule has enabled us to find and replace manholes that have a high likelihood of collapse. Indeed, since December 31, 2015 one manhole collapsed requiring emergency repairs and replacements. A number of manholes and sewer lines have been identified as in a similar condition. These are being scheduled for replacement and lining.

The Headworks (point of intake for the entire plant) has a grit removal system that was designed and installed under the direction of the former engineer in 1998 but never worked properly and

was taken off line. The grit removal system is a critical component and needs to be replaced Many of the automatic controls for the utility water system ceased working long ago and need to be replaced. The lower bearings for the three gigantic screw pumps that are used to push the product from the headworks intake pool into the plant are worn out and must be replaced. In addition the building is not explosion proof and does not now meet regulatory requirements. It must be upgraded.

The anaerobic digester building is leaking methane gas, has corroded rollers on the floating cover of Secondary Digester, corroded waste burner, faulty regulators and pressure relief valves and the building is not explosion proof. This building is part of the original sewer plant and has been outdated for years. There was a flash fire in this building approximately four decades ago, injuring two township employees. The conditions in this building were not adequately addressed in the past. The former engineer issued a statement in the fall of 2015 that only cosmetic repairs were needed for the digester. That is not so as revealed through the rigorous inspection conducted by HRG and the Sewer Plant staff. Emergency repairs were initiated in the Fall of 2016 when the methane gas reading inside the building reached 20%. Methane gas is explosive at 5%. Currently the gas reading inside the building is at 0% but only after significant venting measures were instituted. The digesters are currently functioning, but the process is not sustainable with only emergency measures taken – the digesters must be reconstructed and in a manner that meets current regulatory requirements.

There are ten pump stations in the Township collection system that push product to the wastewater treatment facility. Improvements to these pump stations will include the installation of by-pass pump connections and upgrading of pump motors, electrical equipment and connections that will assist in future operations of these pump stations.

The EPA has mandated a reduction in phosphorous that significantly impairs our waterways. The standard required by the EPA requires significant additions in chemical enhancements and equipment to reduce the phosphorous levels in the effluent. There exist very few alternatives that get an operational municipal wastewater treatment facility to the required level. Membrane technology upgrades could cost tens of millions of dollars to install. HRG has found a system that should reduce the phosphorous levels to that acceptable by the EPA. The system is already in place at a few other wastewater treatment plants in Pennsylvania. Testing must be conducted to determine if the system can work on a pilot level here before the Authority gives final approval to proceed with installation of the $3.3 million CoMag system.

Finally, replacement of the 45 year old emergency generator has been completed. The generator is so old that it was difficult to obtain repair parts. In addition, the underground fuel storage tank for the old generator did not meet environmental regulations. The old system was taken off line last week and the new dual generator system is operational. This critical component of the wastewater treatment plant needed to be replaced so that in the event of a power outage the plant can still operate properly.

The cost to the residents of the Township for these needed upgrades is manageable. A rate impact analysis has been prepared by HRG after extensive review of supporting documents, discussions with the Township staff and professional advisors, planned capital projects and

preliminary borrowing scheduled provided by TD Bank and RBC; HRG evaluated the existing rates and determined the general magnitude of user fees to all customers of the sewer system. The expected increase for West Goshen Township customers, based on the 20 year Bond Issue, is approximately 13.2%.

Currently residential and apartment customers pay a flat $65 per quarter year for sewer rates. This is one of the lowest sewer rates in any Chester County municipality.

Valley Township (Coatesville)	$220.00 per quarter
Oxford Area	$75.00 per quarter
Uwchlan Township	$93.00 per quarter
New Garden Township	$189.00 per quarter
New Garden after sale to Aqua	**$263.00 per quarter**

A 13.2% increase from the current $65 is less than $9 per quarter for West Goshen residents. The Sewer Authority is also considering a nominal fee per quarter for a capital equipment replacement fund. That amount has not yet been determined.

The $20 million bond issuance provides substantial capital improvements that must be made. An increase of only 13.2 percent is a nominal increase and still keeps the cost of the West Goshen Sewer plant as one of the lowest in the County.

There will be no rate increase requested in 2017 or 2018 under the estimated debt service for the 20 year bond issue.

Expected annual repayment in 2017	$310,898.
Expected annual repayment in 2018	$722,435.
Expected annual repayments in 2019	$1,405,461.
Final expected annual payment in 2037	$1,405,013

A rate increase will be needed beginning in 2019 to service the debt.

Respectfully Submitted,

Theodore J. Murphy, Esquire
Chairman
West Goshen Sewer Authority
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March 7, 2017

West Goshen Township Board of Supervisors
1025 Paoli Pike
West Chester, Pennsylvania 19382

Re: Description of Capital Projects for
West Goshen Sewer Authority

Dear West Goshen Township Board of Supervisors:

In accordance with your request, and on behalf of the West Goshen Sewer Authority (Authority), Herbert, Rowland & Grubic, Inc. (HRG) has prepared a summary of the proposed improvements to the Authority's collection, conveyance, and treatment systems that were originally proposed in the 2015 Capital Improvement Plan and further defined as additional information has been made available during planning and design phases of other projects.

The proposed improvements are based on our professional judgement. Our recommendations were made using information available and include, but are not necessarily limited to: record documents, operational data, physical site visits, interviews with Township Operations Staff, third party inspections and/or site visits, other engineer's reports and recommendations, and our experience with similar systems.

The recommendations have been broken into the below list of Projects. These Projects may be further combined, or separated, as decided by the Authority and based on available resources, schedule, and financing.

Each of the Capital Projects identified below includes a brief Project description, status in the Project delivery cycle, and estimated project cost.

STRUCTURAL REPAIRS TO PRIMARY CLARIFIER NO. 3

The Structural Repairs to Primary Clarifier No. 3 includes selective demolition; reinforcing and pouring of new concrete launders and structural supports; replacement of bridge decking, handrails, and access stairs; and coating of mechanical components and selective concrete.

This Project was initiated due to several structural cracks along the effluent launders and supporting corbels. The cracks were actively leaking and had progressively gotten worse. It should be noted that the clarifier had previously been repaired to address similar cracks that had been present.

The Project is anticipated to be complete (final completion) in March 2017 with a final cost for this Project of $363,700.39.

HRG initially recommended pressure grouting the cracks and sealing the surface with an epoxy coating at an estimated cost of $59,000. The Authority's previous consulting engineers designed and bid the Project.

2016 SANITARY SEWER SYSTEM REPAIR PROJECT (CONTRACT 16-1)

The 2016 Sanitary Sewer System Repair Project consists of repairs and rehabilitation of approximately 2,100 L.F. of sanitary sewer mains (8-inch and 14-inch diameter) and 16 manholes that were identified as priority repairs through closed circuit televisual inspections (CCTV) and visual manhole inspections as a result of a sewer manhole collapse on December 31, 2015. The manholes that were identified to be replaced or rehabilitated were a result of significant hydrogen sulfide deterioration. A majority of the manholes were located at downstream forcemain discharge locations and/or along interceptors. Failure to repair these manholes would result in a high risk of collapse. Replacement of Manhole 1206 was found to be required during preparation of the rehabilitation and was added to the Project at a cost of $59,000. The Project is anticipated to be completed by April 2017.

The estimated cost for this Project is $537,000.

EMERGENCY GENERATOR REPLACEMENT PROJECT (CONTRACT 16-2)

The existing emergency generator was installed in the 1970's and had exceeded its useful life. The Authority's former consulting engineer had identified that parts were becoming increasingly difficult to obtain and Township Staff had concerns about the generator's reliability during an extensive power outage. Additionally, the underground fuel storage tank was not permitted and was identified as an environmental risk that, if it began leaking, could have significant clean-up costs associated with its removal.

The Emergency Generator Replacement Project generally includes, but is not limited to, demolition of an existing generator and related building appurtenances; demolition of an existing 4,000 gallon underground fuel storage tank; installation of two new 500 kW exterior generators, generator pad and platform, and related electrical controls; and minor building demolition, concrete, and masonry modifications to the existing Blower Building at the Authority's WWTP. The Project is currently under construction and is expected to be substantially complete in April 2017.

The estimated cost for this Project is $705,000.

HEADWORKS IMPROVEMENT PROJECT (CONTRACTS 17-1 & 17-2)

In accordance with discussions with the Township Staff, the grit system that was installed in 1998 never operated properly and was taken off-line several years ago. The Headworks Building, specifically, the screening room, contains motor control centers, control panels, motors, and other electrical equipment that is not explosion proof and therefore does not meet regulatory requirements as well as posing a safety risk to Staff. Over the past year, the Operations Staff started experiencing issues with the existing mechanical screen and utility water system. The manufacturer for the mechanical screen reviewed the equipment and proposed that the system be rebuilt or replaced. The automatic controls for the utility water system had ceased to work properly and the strainer needed replaced. As a result the utility water skid system was recommended to be replaced to better accommodate the additional water demand for the mechanical screen and the grit removal system. Finally, the lower bearing assemblies for the existing screw pumps originally installed in 1998 were identified by Township Staff to be replaced as a maintenance item in conjunction with the non-explosion proof motors.

The Headworks Improvement Project generally includes, but is not limited to, demolition of an existing fine screen, utility water system, and grit removal system; construction of building addition to accommodate new vortex style grit removal system; provision and installation of utility water system; installation of two (2) new fine screens, vortex grit removal system, grit classifier, screenings and grit conveyors, and related electrical controls; relocation of electrical equipment to an expanded electrical room; replacement of screw

pump motors and lower bearing assemblies; minor site work including upgrading an existing rain garden; and minor building demolition and concrete and masonry modifications to the existing Headworks Building at the Authority's WWTP. The proposed improvements for this Project will provide compliance with NFPA 820 and NEC requirements.

The estimated cost for this Project is $2,188,475 and is anticipated to be fully constructed within 330 days of issuance of the notice to proceed with construction to the selected contractors. The preconstruction conference and notice to proceed is scheduled for March 10, 2017.

ANAEROBIC DIGESTER REPLACEMENT PROJECT (CONTRACTS 17-3 & 17-4)

The Anaerobic Digester and associated building, built as a component of the original wastewater treatment plant was identified as needing significant improvements based on our initial assessment. A complete list of recommendations is included in pages 13-19 of the 2015 Capital Improvement Plan. A summary of the issues observed are as follows: lack of operational gas safety equipment and inadequate size based on regulatory requirements, leaking roofs, corroded rollers on Secondary Digester; corrosion of gas burner and inadequate operations controls requiring manual ignition, and compliance issues associated with hazardous rated areas.

During evaluation of the anaerobic digesters for repair, rehabilitation, or conversion to mechanically thickened aerobic digestion, a significant gas leak occurred and was reported by the Township Staff. The Authority authorized emergency repairs which included three phases: 1) repair to Primary Digester roof at the interface point with the parapet (goal of reducing gas leaking from digester under membrane roof into leaking control building roof); 2) temporary repair of roller assemblies for Secondary Digester; and 3) replacement of pressure regulators and relief valves, flame arrestors, and other gas safety equipment on Primary and Secondary Digesters. During this time two, third party, companies reviewed the condition of the Digesters and associated control building and provided correspondence to the Township Staff identifying their safety and operational concerns.

The evaluation completed by HRG recommended that the Anaerobic Digesters be repaired and rehabilitated in lieu of replacement with an aerobic operation based on present worth costs. The Authority then decided to replace the existing digester tanks as part of the Project to physically separate them from the control building, reduce risk of unknown interior conditions of existing tanks, and reduce the need for pumping and hauling operations during construction.

The Anaerobic Digester Replacement Project generally includes, but is not limited to, demolition of existing primary and secondary digesters; selective demolition of components of the Digester Building, and process equipment; construction of new primary and secondary anaerobic digesters, cover, and mixing equipment, gas conditioning equipment, sludge piping, and miscellaneous process and process control equipment and piping; new building ventilation system, lighting, and replacement of the existing roof. The Project is currently under design and is tentatively scheduled to be advertised for public bidding in July 2017.

The estimated cost for the Project is $4,295,750 and is anticipated to be fully constructed by October 2018, pending any delays.

PUMP STATION PHASE 1 IMPROVEMENTS: BY-PASS PUMP CONNECTIONS (CONTRACT 17-5)

The Pump Station Phase 1 Improvements include the installation of by-pass pump connections at the following pump stations:

1. Montgomery Avenue Pump Station (No. 1)
2. Trinity Drive Pump Station (No. 2)
3. Spruce Avenue Pump Station (No. 3)
4. Ellis Lane Pump Station (No. 6)
5. Taylor Run Pump Station (No. 11)
6. Washington Street Pump Station (No. 12)
7. Westtown Way Pump Station (No. 13)
8. Fern Hill Pump Station (No. 16)

The installation of by-pass pump connections allow for temporary by-pass pumps to be installed and utilize the existing pump station forcemain during routine, emergency, or planned repairs to the existing pumps, pump motors, or electrical equipment (power, drives, etc.). Although the installation of by-pass pump connections is not required, their installation and use will reduce future operations costs (highest during emergency repairs) by reducing or even eliminating the need for pumping and hauling operations, or extensive temporary by-pass pump piping. The installation of the by-pass pump connections will also help facilitate construction of the Pump Station Phase II Improvements for the Trinity Drive Pump Station, Westtown Way Pump Station, and Taylor Run Pump Station. The Project is currently under design and is anticipated to be advertised for public bidding in April 2017.

The estimated Project cost is $914,800 and is expected to be substantially completed by December 2017.

2017 SANITARY SEWER SYSTEM REPAIR PROJECT (CONTRACT 17-6)

The 2017 Sanitary Sewer System Repair Project consists of replacement, repairs and rehabilitation of 27 discrete sewer and manhole areas in the Township identified as priority repairs through closed circuit televisual inspections (CCTV) and visual manhole inspections conducted as a result of continued investigation and maintenance. Additional repair areas were identified but will be completed by Township Staff using their own labor and equipment. These areas if not repaired, would result in either failure or more expensive repairs (such as full replacement). The Project is currently under design and is anticipated to be advertised for public bidding in July 2017.

The estimated Project cost is $1,606,000 and is expected to be substantially completed by June 2018.

ENHANCED CHEMICAL ADDITION PROJECT

The Enhanced Chemical Addition Project includes upgrade of existing chemical addition equipment and the installation of advanced controls to reduce total phosphorus (TP) effluent limits to 0.8 mg/L and maintain compliance with pH effluent limits as required by the interim settlement agreement with the Environmental Protection Agency. The Project was submitted for a CFA Small Water and Sewer Program Grant. The schedule is dependent on the award of the Grant in March 2017. If the Grant is not received, final design would proceed in April 2017 and the Project would be advertised for public bids by September 2017.

The estimated Project cost is $582,750 and is expected to be substantially completed by April 2018.

WASTEWATER TREATMENT PLANT PHASE II IMPROVEMENTS

The Wastewater Treatment Plant Phase II Improvements Project include several upgrades and/or improvements to the existing WWTP that generally include four (4) major areas:

1. Aeration Basin Improvements

   A. Replace 16-inch diameter buried aeration piping between Blower Building and Aeration Tank that has been identified to be leaking (as found during rain events)

   B. Installation of variable frequency drives (VFDs) on existing blowers to reduce power consumption and improve flexibility and operability of blowers; minimize operating costs

   C. Installation of DO sensors in Aeration Basins to improve operability and control blower speed/output

   The repair and improvements to the Aeration Basin will help reduce operations cost and provide additional flexibility for the operations staff.

2. Ballasted Clarification System (Advanced TP Removal)

   The ballasted clarification system includes installation of the following components:

   A. Chemical feed equipment for addition of caustic, coagulant, and polymer

   B. Static mixer

   C. Coagulant tank and mixer

   D. Ballast tank and mixer

   E. Polymer tank and mixer

   F. Sludge shear mixer

   G. Magnetic drum separator

   H. RAS/WAS Pumps

   I. Controls (flow meters, turbidity meters, control valves, PLC, etc.)

   The ballasted clarification system is intended to reduce effluent TP concentrations to the TMDL limit of 0.04 mg/L as imposed by EPA. The implementation of this component of the Phase II Project is dependent on successful pilot testing of the equipment. The pilot testing is scheduled to be completed in April 2017.

3. Clarifier Rehabilitation

   A. Inspection and maintenance of drives by certified manufacturer's technician

   B. Rebuild or replace clarifier drives and mechanisms for eight (8) of nine (9) clarifiers

   C. Install TSS and Sludge Level probes for improved wasting operations

The clarifiers that are being evaluated and scheduled for overhaul and/or repairs were original 1961 and 1975 equipment. Clarifiers installed in 2000 are not currently scheduled for repair. Inspections of the equipment is being performed by Evoqua's certified technician in the Spring and Summer of 2017. Repairs, rebuilds, or replacement of components will only be completed if inspections indicate that they are required for proper operation of the system.

4. Dewatering System Improvements

The Dewatering System Improvements include rebuilding or replacing the existing belt filter presses originally installed in the 1980s (refurbished around 2007) and 1999; improvements to the Dewatered Sludge Building including upgrade of ventilation equipment to reduce the humidity currently causing corrosion of equipment; replacement of media cartridges in odor control equipment, replacement of corroded electrical and process equipment; replacement of sludge conveyor; installation of flow meters to record volume of sludge delivered to dewatering equipment; re-installation of sludge grinders; replacement of deteriorated piping; general building improvements including new light fixtures, replace corroded doors, etc. These improvements were originally scheduled in 2014 to be completed by 2019.

The total estimated Project cost is $7,362,800 and is expected to be substantially complete by December 2020.

2018 SANITARY SEWER SYSTEM REPAIR PROJECT

The 2018 Sanitary Sewer System Repair Project consists of replacement, repairs, and rehabilitation of priority repair areas identified by the Township through closed circuit televisual inspections (CCTV) and visual manhole inspections. The conceptual cost estimate below is based on size and scope of 2016 Sanitary Sewer System Repairs.

The estimated Project cost is $512,000 and is expected to be substantially completed by November 2018.

PUMP STATION PHASE II IMPROVEMENTS

Pump Station Phase II Improvements include major repairs to the Trinity Drive Pump Station, Westtown Way Pump Station, and Taylor Run Pump Station as well as replacement of the Downing Avenue Pump Station.

Trinity Drive (Pump Station No. 2)

Repairs to the Trinity Drive Pump Station generally includes the following:

1. Replace submersible pumps
2. Replace 4-inch diameter forcemain
3. Replace non-functioning 4-inch diameter mag meter and install new data logger
4. Installation of fall protection system
5. Repair spalling/cracked concrete around wet well
6. Replace water service to pump station
7. Install sewage grinder on wet well influent
8. Minor site improvements

The repairs are necessary to replace aged and deteriorated equipment as well as to correct issues with the pumps including, but not limited to, clogging due to rags, lack of automatic alternating operation, head conditions (impaired pump capacity) most likely as a result of forcemain condition (reduced diameter or increased roughness coefficient typical in cast iron forcemains).

Westtown Way (Pump Station No. 13)

Repairs to the Westtown Way Pump Station generally includes the following:

1. Upgrade electrical equipment in the wet well to meet hazardous area requirements
2. Rehabilitate deteriorated ferrous metal and concrete components
3. Evaluate installation of a wet well mixing system to keep grease in suspension in the wastewater and prevent from accumulating in the wet well
4. Relocation of the influent sewage grinder to the end of the influent channel to reduce the headloss impact and therefore reduce grit accumulation. This may require the installation of new a new railing system to support the sewage grinder.
5. Minor building improvements:
   A. Replace existing windows
   B. Repair, replace and upgrade existing HVAC equipment
   C. Block in any building penetrations no longer needed
   D. Seal leaking wall penetrations
   E. Cut new floor drain piping into the floor.
6. Replace existing valve with a new gate valve. This will require the installation of a temporary line stop or new valve outside of the pump station in order to prevent wastewater from draining out of the force main.
7. Replacement of the existing emergency generator
8. The existing diesel fuel tank for the emergency generator is located outside above the wet well. If the emergency generator is replaced with an exterior rated unit, a subbase fuel tank can be combined into the base for the new generator.
9. Install new VFDs
10. Evaluate replacement of MCC
11. Install mount-anywhere style discharge flow meter
12. Install gas detection equipment in the wet well
13. Evaluate the effectiveness of switching to a series pumping configuration should be performed due to high head conditions
14. Installation of a data logger or influent flow meter to monitor influent flows to the pump station

15. Modify louver over the wet well so the base of the louver is more than 18 inches above the top of the wet well tank.

Woodcrest/Downing Avenue (Pump Station No. 10)

Repairs to the Trinity Drive Pump Station generally includes replacement of the current dry well / wet well style pump station with a submersible style pump station due to the following:

1. Existing comminutor is no longer operational
2. Concrete and ferrous metal deterioration from exposure to hydrogen sulfide gas was observed in the wet well
3. Evidence of infiltration in the dry well
4. Observed corrosion of the below grade steel dry well, particularly near the pipe penetrations
5. Township Staff reported that maintenance of the existing equipment in the dry well is very difficult given the arrangement of the various pumps, piping, valves, controls, and other components in the small dry well area
6. The existing pumps are 41 years old

Taylor Run (Pump Station No. 11)

Repairs to the Taylor Run Pump Station include the following:

1. Block doorway between pump room and wet well to physically separate wet well from the rest of the building. Upgrade electrical and HVAC equipment in the wet well to meet hazardous area requirements. Relocate sewage grinder hydraulic power pack out of the hazardous rated area.
2. Rehabilitate deteriorate ferrous metal and concrete components
3. Replace steel roof support
4. Replace existing door and windows
5. Replace failed ventilation systems
6. Seal leaking wall penetrations in dry well
7. Install new variable frequency drives
8. Install new electrical conduit, including lights, switches, and outlets.
9. Replace existing emergency generator with outdoor enclosed generator. The existing generator radiator leaks and the Township has experienced issues with equipment.
10. Remove underground fuel storage tank
11. Replacement of the motor control center
12. Install discharge flow meter
13. Install gas detection equipment in the wet well

14. Replace pump discharge header piping that has cracked flanges and replace non-functioning isolation valves

The total estimated Project cost is $4,493,780 and is expected to be substantially complete by December 2020.

2019 SANITARY SEWER SYSTEM REPAIR PROJECT

The 2019 Sanitary Sewer System Repair Project consists of replacement, repairs and rehabilitation of priority repair areas identified by the Township through closed circuit televisual inspections (CCTV) and visual manhole inspections. The conceptual cost estimate below is based on size and scope of 2016 Sanitary Sewer System Repairs.

The estimated Project cost is $512,000 and is expected to be substantially completed by November 2018.

Please feel free to contact me at jfox@hrg-inc.com or at 717-564-1121 if you have any questions or require any further clarification on the recommended improvements.

Sincerely,
Herbert, Rowland & Grubic, Inc.

Joshua T. Fox, P.E.
WGSA Engineer

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c: West Goshen Sewer Authority
Mr. Michael Moffa, Wastewater Superintendent
Mr. David Woodward, Public Works Director
Mr. Edward A. Ellinger, P.E. Wastewater Practice Area Leader
HRG File