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**ANNUAL REPORT ON OPERATIONS OF THE
STORMWATER MANAGEMENT PROGRAM
FISCAL YEAR 2023**

Submitted to: Bethlehem Township Municipal Authority
ATTN: Steven J. Hunsberger, Managing Agent
4225 Easton Avenue Bethlehem, PA 18020

R009170.0429

Submitted: As of December 1, 2023

Herbert, Rowland & Grubic, Inc.
Engineering | Planning | Infrastructure Solutions

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INTRODUCTION

This Annual Report is prepared in accordance with Section 10.01 of the Agreement of Lease, adopted December 2021.

The purpose of this report is to review the operations of the stormwater management program during the fiscal year and set forth recommendations, both technical and financial, for the ensuing fiscal year. The Year 2023 is the second fiscal year in which the Bethlehem Township Municipal Authority has operated as a stormwater utility.

GENERAL

The Bethlehem Township Municipal Authority (the "Authority") is a body corporate and politic, incorporated under provisions of the Municipal Authorities Act of 1945, approved May 2, 1945, P.L. 382, as amended and supplemented, of the Commonwealth of Pennsylvania, pursuant to an Ordinance of the Board of Commissioners of the Township of Bethlehem, Northampton County, Pennsylvania (the "Township").

The Township is subject to the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. The Authority has been tasked with the operations and maintenance of the storm sewer and stormwater detention systems.

The Authority presently consists of the following members:

David Thomsen	-	Chairman
Ronald Gori	-	Vice-Chairman
Paul Hosking	-	Secretary/Treasurer
Robert Szakos	-	Assistant Treasurer
Allen Billiard III	-	Member

Others associated with the Authority and Township stormwater program are:

Doug Bruce	-	Township Manager
Richard Kanaskie	-	Public Works Director
Andy Freda	-	Finance Director
Steven J. Hunsberger	-	Managing Agent for the Authority
Michael Deschler, Esquire	-	Authority Solicitor
Herbert, Rowland & Grubic, Inc.	-	Stormwater Consulting Engineer
Barbacane, Thornton & Company (BTCPA)	-	Auditor
U.S. Bank Global Corporate Trust	-	Trustee
Kevin C. Reid, Esquire	-	Bond Counsel

STORMWATER MANAGEMENT FACILITIES

Bethlehem Township has a stormwater management system consisting of two parts. These parts are the stormwater collection and conveyance system and the system of detention and treatment facilities. The purposes of these systems are to collect, convey, and manage stormwater runoff. The Township of

Bethlehem is divided into four watersheds, the Monocacy Creek, Nancy Run, Lehigh River and Lower Bushkill Creek watersheds. Each watershed has a stormwater system serving it. See Appendix A for the current map of the Stormwater Management Facilities.

CONVEYANCE SYSTEM

General Information

The Township storm sewer system is designed to collect and convey stormwater to designated detention/treatment facilities, or to directly outlet to public waterways. The system consists of approximately 84 miles of storm sewer ranging from 3" to 75" pipe, approximately 900 manholes and 4,500 inlets, and 128 regulated outfalls and 10 observation points.

Maintenance

On behalf of the Authority, the Township responds to complaints of localized flooding and investigates the conveyance system within the area for signs of clogged pipes or inlets, or debris blocking swales. Starting in 2024, the Authority plans to initiate a system condition assessment program to visibly inspect infrastructure for its condition.

DETENTION/TREATMENT FACILITIES

General Information

The Authority detention and treatment facilities consist of multiple dry-detention and bioinfiltration ponds. These detention ponds are designed to aggregate flows from multiple storm sewer sections and release the combined flow at a reduced rate, alleviating instantaneous flows downstream of the facility. The infiltration ponds serve the same purpose of the detention pond, with the added ability to infiltrate some water into the ground eliminating some volume from the system. They also provide treatment in the form of sediment and nutrient load reduction. The Township operates a total of 33 detention and bioinfiltration ponds. See Appendix B for a summary of these facilities.

Maintenance

Detention and treatment facilities are passive systems and thus have longer maintenance intervals than active systems. Per Ordinance No. 05-23, dated August 21, 2023, Township staff on behalf of the Authority will inspect Township owned BMP's once every three years and during or immediately after the cessation of a ten-year or greater storm. Sediment accumulation is to be tracked and if excess sediment begins blocking structures or otherwise effects basin functions it is to be removed and the area restabilized. The dry-detention basins are routinely mowed to allow access for inspections and to ensure no exotic/invasive species are present. Bioinfiltration basins are not mowed regularly to promote plant growth but are still inspected for sediment accumulation and debris.

MS4 PERMIT REQUIREMENT ACTIVITIES

During the July 1, 2022 - June 30, 2023 permit year, permit requirements were met and reported in an annual report to PADEP completed in September 2023. All written plans were reviewed and updated as necessary during the permit year. These plans included the Public Education and Outreach Program, Public Involvement and Participation Plan, Illicit Discharge Detection and Elimination Plan (including sampling

protocols for suspected illicit discharges), Construction Site Stormwater Runoff Control Program, Post Construction Stormwater Management in New Development and Re-development Plan, Pollution Prevention and Good Housekeeping Program, and Operations and Maintenance Manual.

In addition to the updated plans, updates were made to the Township Website that provided additional information for the public regarding MS4 educational materials and stormwater projects being completed by the Township/Authority.

The MS4 permit requires inspection of all regulated outfalls that discharge to public waters during each five-year MS4 permit cycle. This year, 25 outfalls were inspected. Of the inspected locations, none revealed dry weather flows. Additionally, the permit requires inspection of post construction stormwater management (PCSM) BMPs associated with NPDES permits during the permit cycle. During this reporting year, 11 BMPs were inspected.

A training for Public Works staff was completed during the permit year, which focused on the MS4 program requirements and how to report and mitigate any illicit discharges.

In fall of 2023, the Township adopted an updated Stormwater Management Ordinance to meet DEP MS4 requirements. The Township also submitted a Notice of Intent relative to their MS4 permit for the next 5-year permit term.

PLANNED IMPROVEMENTS

CAPITAL IMPROVEMENT PLAN

Starting in 2022, the Authority and Township have published a Capital Improvement Plan (CIP) which continues to be updated periodically to address stormwater flooding and water quality needs. This plan identifies projects to address these needs. Below each of these projects are summarized, and the progress made during this year is discussed. A map of the CIP project locations can be found in Appendix D.

Watershed Studies

As part of the CIP, a watershed study has been started to model the entirety of the Nancy Run and Lehigh River watersheds. This will allow the Authority to effectively plan projects that will provide the most benefit.

Flow monitors were installed at select locations within the watersheds and maintained from fall 2022 to spring 2023. These reported data will help to improve the accuracy of the modeling. The modeling analysis is planned to be complete in early 2024.

Walnut Street Drainage Improvements

This project seeks to mitigate flooding along Walnut Street and at its intersection with Willow Park Road. It includes the construction of new storm sewer. The design process is complete and is currently in the permitting stage. A DEP permit has been issued and an HOP permit is currently under review. It is anticipated that this project will be substantially completed by spring 2025.

This project is currently in design and a funding application was submitted in fall 2023.

Pollution Reduction Basin Retrofits

These projects are to meet pollution reduction requirements as part of the Township's MS4 permit. It includes retrofitting existing detention basins into bioinfiltration basins.

During the development of the CIP the proposed PRP projects were separated into two phases.

Phase 1

Four (4) basins were included in Phase 1. These basins include the Washington Street, Long Court, Walnut Hills, and Vintage Dr basins. Construction is ongoing with anticipated completion by spring 2024.

Phase 2

Phase 2 of the Basin Retrofit Projects include the Shelton Avenue and Country Top Trail basins. The design for these basins is complete. The DEP permit for the Country Top Trail basin has been issued. The permit for the Shelton Avenue basin is currently in review by DEP Dam & Safety and the permit should be issued by the end of 2023. The current schedule is to submit a funding application in February 2024 with project bidding in late 2024. However, one or both of these projects may be delayed if the Sculac Stream Restoration project is instead used to meet the MS4 permit PRP requirements for this permit term.

As the Country Top Trail basin is privately owned, it was decided to acquire the land for construction and maintenance purposes. Property acquisition is on-going.

Easton/Santee Flood Mitigation Project - Phase 1

This project seeks to mitigate severe flooding that occurs along Willow Park Road, Easton Avenue, Santee Road, Sunset Drive, and Clifton Avenue. These roads have become impassable at least once per year in recent years. This project will include the retrofitting of three (3) basins and creation of a fourth.

This project has locations within both Bethlehem Township, and the City of Bethlehem. Because of this, an agreement has been executed to create a partnership where the PRP credit for both entities can be shared. In addition, one basin that is located within the Township is on private property. The Authority is currently in the process of acquiring construction and maintenance easements.

The project design has been completed and a permit has been submitted to DEP and is currently under review. The current schedule projects the permit to be in hand by January 2024, with bidding in summer of 2024.

Easton/Santee Flood Mitigation Project - Phase 2

This project continues work conducted during the Phase 1 project by improving conveyance of stormwater from the retrofitted basins through Santee Road and Easton Ave to the Nancy Run Creek.

This project relies on the completion of Phase 1 and the Watershed Studies. Once these are complete, locations can be identified where improvements can have the most impact on improving flooding within the area.

Sculac Stream Restoration

This project seeks to restore a creek that runs under Sculac Drive. Upstream of Sculac Drive, this creek has experienced severe erosion that has impacted abutting residents and exposed sanitary sewer infrastructure that runs adjacent to the creek bed.

A feasibility study was completed to determine the improvement alternatives. Design was initiated for reach 1. Initial emergency repairs were completed fall 2023 to stabilize near sanitary sewer infrastructure.

PRP credit to meet this MS4 permit term is possible for stream restoration in Reaches 1 and 2. A decision is needed whether to pursue this project or the PRP Phase 2 projects as the means of meeting the PRP requirements for this term. It is anticipated that a new 5-year MS4 permit will have PRP requirements, and that stream restoration will receive less credit in the next permit term than in the current permit term.

Bethman Road and Fairway Drive

Due to a concern from a resident, the Township investigated consistent flooding on Fairway Drive. The inspection confirmed that properties on Fairway Drive and Bethman Road experience consistent flooding and ponding of water on the southwest corner of those respective roads. The expansion of the storm sewer system will resolve this issue.

The project is currently in design with an estimated completion date by fall 2024. It is expected that pay-go, and not a debt instrument, will finance the respective costs for this project.

Farmersville Culvert

Flooding at Farmersville and Easton had been noted in a previous flood study, but work was not initiated as part of the initial CIP efforts. However, a proposed development led to initial efforts to evaluate the culvert under Farmersville Road south of Easton Avenue. This project entails either the replacement or enlargement of the culvert. Concept design work is currently being finalized and the cost estimation process is in progress. Depending on the estimated costs for the project, it may be advisable to obtain financing for constructing the improvements.

BUDGET

COMING YEAR BUDGET

Projected Revenue for Coming Year

The four-year budget model developed in 2021 projected annual revenue each year of \$2.14 M less discounts, delinquencies, and credits.

Stormwater billing occurs in February with a discount offered for property owners who pay the full annual fee upfront rather than quarterly. 97% of bills were paid at the discount. Owners can also submit for various credits. To date, credits have reduced the revenue by less than 1%.

According to the Township's 2022 audit, the 2022 stormwater fund revenue of \$2.07 M was received before submitting delinquent accounts for third party collections. This is higher than the revenue projection in the four-year budget model (due to lower actual credits and delinquencies).

Projected revenue in 2023 is similar to revenue from 2022 because the stormwater fee developed at the establishment of the program was based on a four-year model. Actual revenue may increase slightly due to a 1% increase in Impervious Area (IA) that occurred in 2022, but it may decrease slightly due to additional credit applications.

Allowing for 1% increase in IA, 2% credits and a 2% discount on all properties, projected revenue is \$2.07 M which is slightly higher than the four-year budget model projection.

Projected Expenditures for Coming Year

In the four-year budget model developed in 2021, inflation was projected at 3% per year, but significantly higher inflation occurred in 2022 and 2023. This may impact some expenditures in coming years. However, this may be balanced by less expenses being incurred for smaller contracted projects that occurred in 2022 and 2023. In addition, the lower-than-projected credits and delinquencies has provided some additional revenue.

Some non-project related expenses occurred in 2023 including a study of the stream upstream of Sculac (due to significant erosion of properties and around sanitary sewer facilities) and installation of meters in the Nancy Run Basin. However, MS4 program costs and studies like the above were given consideration in the four-year model under the budget item "Engineering – SW Program Nonreimbursed."

During 2024, the stormwater fund will recover some design expenses incurred in 2023. These are returned to the fund from PENNVEST when settlement occurs on each project and the first payment request is submitted. As a result, the design costs are rolled into the overall project funding. This occurred in summer of 2023 for the PRP Phase 1 project.

In 2024, design costs are anticipated to be recovered for Easton/Santee Flood Mitigation Project - Phase 1, Walnut Street Drainage Improvements and possibly PRP Phase 2.

FUNDING SOURCES

The following funding sources have been or will be pursued for projects:

- A \$137,054 FEMA BRIC grant was awarded for Easton Avenue Flood Mitigation Project Scoping. This was used to define alternatives for flood mitigation improvements in the Nancy Run Watershed using modeling. FEMA will reimburse the Authority this amount in 2024 upon completion of the study.
- A \$3.05 M FEMA BRIC grant was awarded in August 2023 for the Easton Avenue Flood Mitigation Project (Easton Avenue Phase 1).
- A \$1 M CFA grant was awarded for the Easton Avenue Phase 1 project.
- An agreement is in place with Bethlehem City for sharing in the costs of the Easton Avenue Phase 1 project. Current projected City share is slightly less than \$0.6 M.
- A PENNVEST application in the amount of \$4.75 M was submitted in November 2023 for the Walnut Street Drainage Improvements project. It is anticipated that a funding offer will be received in January 2024.
- PENNVEST and the Authority settled on a \$2.49 M loan in June 2023 for the PRP Phase 1 project. The debt obligation has a 20-year term with PENNVEST county cap rates of 1.743% for years 1 to 5 and 2.179% for years 6 to 20. Debt service payments are anticipated to begin in fall 2024 after construction is complete.

- PENNVEST funding applications are planned in 2024 as follows. Debt service from these borrowings were included in the four-year budget model developed when the stormwater program was developed.
 - February 2024 for the PRP Phase 2 project (unless Sculac is pursued instead)
 - February 2024 for the Easton Avenue Phase 1 project

STORMWATER FEE PROJECTION

Revenue and expenditures have been consistent with the four-year budget model. When the stormwater program was developed, the Township and Authority aimed to have a steady fee for 2022 through 2025, if possible. To date, the program is on track with this approach, and a fee increase in 2026 is anticipated. However, actual DEP requirements in the next 5-year permit term are not yet known and may impact the timing and amount of a fee increase.

INSURANCE COVERAGE

An insurance certificate for the Bethlehem Township Municipal Authority will be included in the final report, contained in Appendix F.

CONCLUSION

The stormwater program was successfully implemented in 2022 along with a stormwater fee. A path forward has been progressively developed including the adoption of a capital improvement plan. Initiation of modeling efforts will assist with continued development of the plan in 2023.

In 2023, significant construction and project funding began as the CIP is being implemented. While the timeframe is tight for meeting the MS4 Permit pollution reduction requirements by April 2024, the program is steadily moving in that direction.

As was decided in 2021 when developing the stormwater program approach, one element not yet pursued is condition assessment of the existing system. This effort is planned for initiation in 2024.

RECOMMENDATIONS

Below are the recommendations provided by HRG for continued operation of the stormwater management system by the Authority:

- Continue to implement and update the Stormwater Capital Improvement Plan.
- Develop an approach for an annual condition assessment program for all facilities within stormwater management system such that it can be initiated in 2024.
- Implement record keeping systems for all maintenance performed on the stormwater management system.
- Continue implementation of GIS tracking system for stormwater concerns to help identify areas of concern within the Township.

APPENDIX A



Bethlehem
Stormwater Infrastructure

Bethlehem Township
Northampton County, PA

- Manhole
- Inlet
- Stormwater Gravity Mains
- Stormwater Open Channels
- Township Owned Basins
- Stormwater Basins
- Bethlehem Township

0 0.1 0.2 Miles
Mapping derived from data provided by ESRI, PennDOT, and USGS.

12/4/2023 PM:JP GIS:RBG QA:JP R009170.0425

HRG
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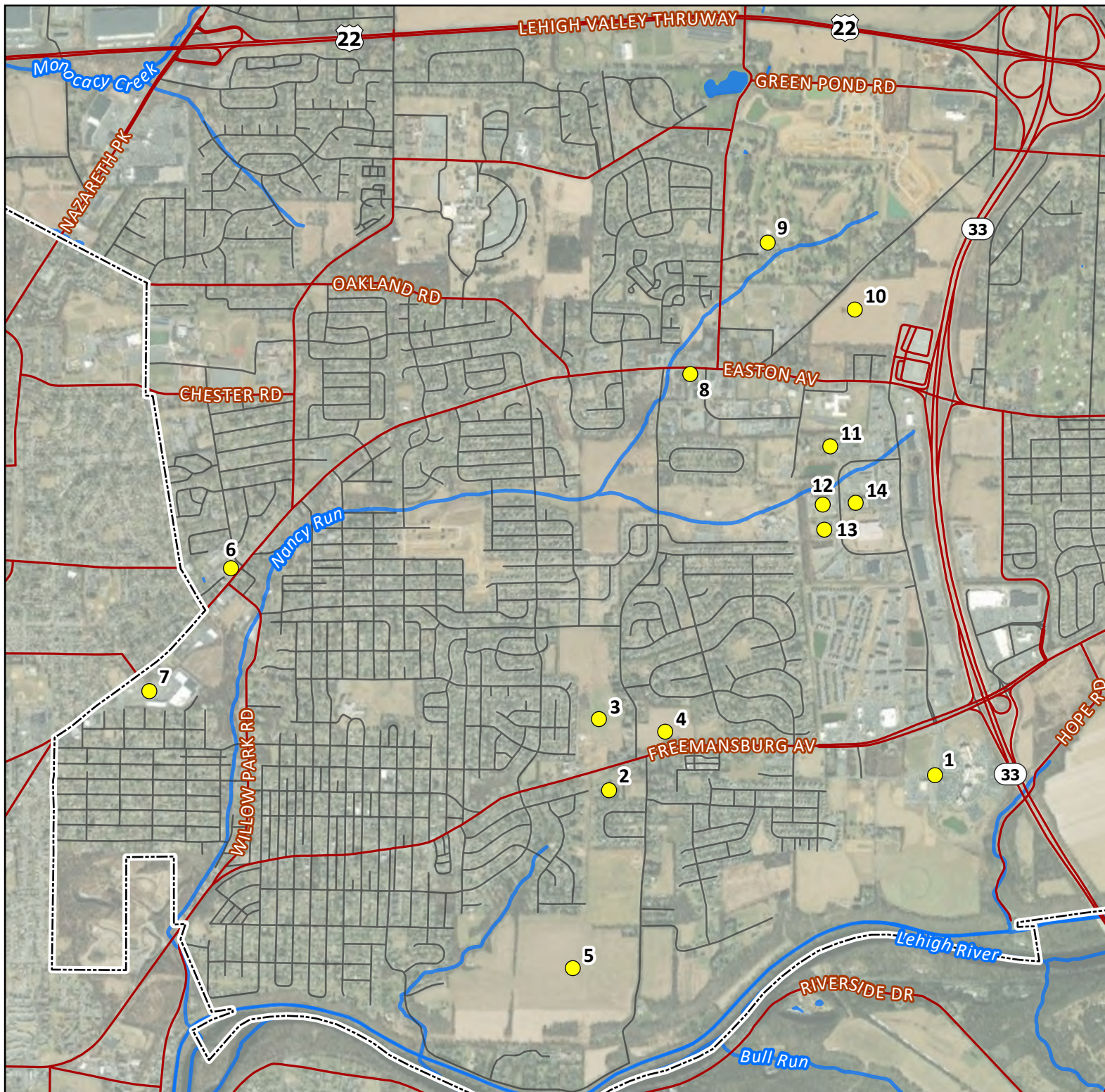
APPENDIX B



BETHLEHEM TOWNSHIP OWNED DETENTION FACILITIES				
Basin ID	Facility Type	Latitude	Longitude	Drainage Area (Acres)
B2	Dry Detention Basin	40.6560	-75.2732	51.2
B3	Dry Detention Basin	40.6567	-75.2723	0
B5	Dry Detention Basin	40.6584	-75.2789	414.4
B12	Dry Detention Basin	40.6586	-75.3245	24.5
B13	Dry Detention Basin	40.6577	-75.3241	76.6
B14	Dry Detention Basin	40.6612	-75.3003	2.5
B16	Wet Detention Basin	40.6624	-75.2996	111
B18	Dry Detention Basin	40.6617	-75.3015	13.7
B21	Dry Detention Basin	40.6604	-75.3019	9.1
B23	Wet Detention Basin	40.6644	-75.3083	3.5
B24	Dry Detention Basin	40.6695	-75.3136	66.8
B25	Dry Detention Basin	40.6729	-75.3095	50.8
B30	Dry Detention Basin	40.6567	-75.3051	14.6
B31	Dry Detention Basin	40.6583	-75.3039	8.9
B32	Dry Detention Basin	40.6578	-75.3079	8.1
B33	Dry Detention Basin	40.6590	-75.3106	12.6
B34	Dry Detention Basin	40.6587	-75.3144	17.8
B35	Dry Detention Basin	40.6590	-75.3191	14.9
B36	Dry Detention Basin	40.6566	-75.3293	1.1
B37	Dry Detention Basin	40.6526	-75.3213	5.5
B39	Dry Detention Basin	40.6517	-75.3148	54.8
B40	Dry Detention Basin	40.6495	-75.3192	8.9
B41	Dry Detention Basin	40.6496	-75.3224	16.3
B42	Dry Detention Basin	40.6481	-75.3222	3.9
B45	Dry Detention Basin	40.6464	-75.3150	98.4
B46	Dry Detention Basin	40.6469	-75.3050	46.5
B52	Dry Detention Basin	40.6534	-75.3030	82.9
B57	Dry Detention Basin	40.6597	-75.3217	58.5
B58	Dry Detention Basin	40.6603	-75.3162	35.6
B82	Dry Detention Basin	40.6616	-75.3279	120.1
B89	Dry Detention Basin	40.6675	-75.3324	18.5
B92	Wet Detention Basin	40.6757	-75.3406	0.6
B103	Infiltration Basin	40.6733	-75.3517	3.6

APPENDIX C





Bethlehem Township MS4 PCM Locations

Northampton County, PA

- PCM Locations- Lehigh River
- Bethlehem Township
- Local Roads
- State Roads
- Waterbody

1,500 0 1,500 Feet

Mapping derived from data provided by PennDOT, PEMA, USGS, and ESRI.

8/30/2022	PM: BRH	GIS: ALV	QA: JJR	R008488.0428
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HRG
Herbert Rowland & Grubic, Inc.
Engineering & Related Services
An Employee-Owned Company

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APPENDIX D



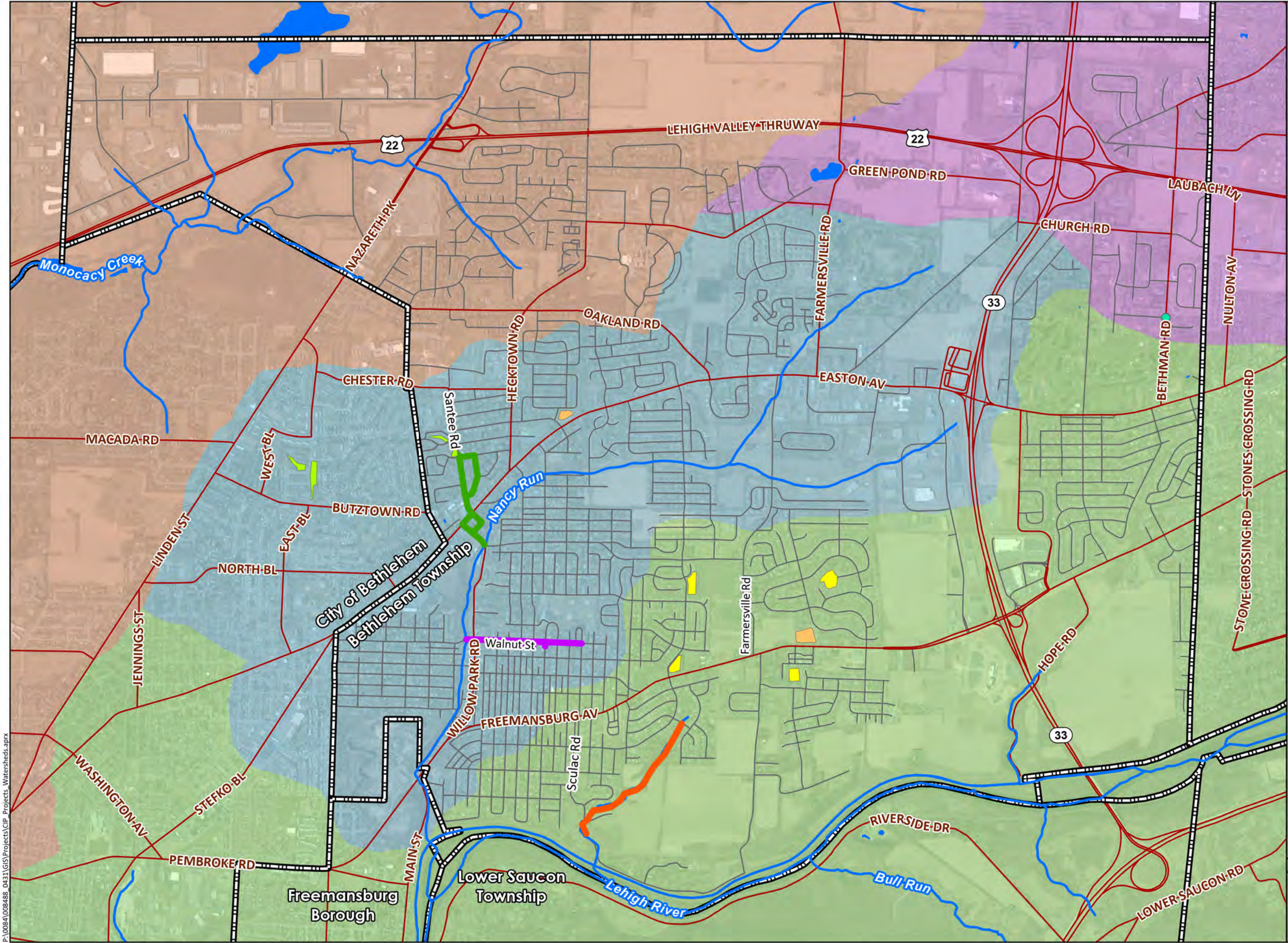
5-Year Stormwater Capital Improvement Plan

Bethlehem Township
Northampton County, Pennsylvania

- Bethman Rd and Fairway Dr Drainage Improvements
- Walnut St Drainage Improvements
- Easton Avenue Phase 1
- Easton Avenue Phase 2
- Pollution Reduction Basin Retrofits- Phase 1
- Pollution Reduction Basin Retrofits- Phase 2
- Sculac Stream Restoration
- Streams
- Municipal Boundary
- State Roads
- Local Roads
- Waterbody
- Lower Bushkill Creek
- Lehigh River Watershed
- Monocacy Creek Watershed
- Nancy Run Watershed

0 1,000 2,000 Feet
Mapping derived from data provided by ESRI, PennDOT, and USGS.
11/21/2023 PM: MV GIS: ALV QA: MV R008488.0431

HRG 369 East Park Drive
Harrisburg, PA 17111
717.564.1121 [phone]
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APPENDIX E



CERTIFICATE
OF
INSURANCE BROKER OF RECORD
FOR
BETHLEHEM TOWNSHIP MUNICIPAL AUTHORITY

The undersigned Insurance Broker of Record hereby certifies the following insurance information concerning the Bethlehem Township Municipal Authority Stormwater System and the operation thereof:

A. PROPERTY INSURANCE- None (See 4 and 5 below)

1. Policy Number N/A
Effective Date N/A
Expiration Date N/A

2. Name of Insurance Company N/A
Address N/A

3. Perils Covered N/A

4. Description of the amounts and types of insurance now in force and the physical structures covered by such insurance:

<u>Types of Insurance and Structures Covered</u>	<u>Amounts of Insurance</u>
The below-ground property constituting a portion of the stormwater system, is not insurable, and property damage insurance is not generally provided, as a trade practice, in the operation of stormwater systems.	\$0

5. There are no physical structures constituting parts of the stormwater system upon which property damage insurance is normally carried, as a trade practice, in the operation of stormwater systems.
6. The insurance now in force is X is not adequate for the ensuing Fiscal Year, subject to the limitations set forth in paragraphs 4 and 5.
7. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained during the ensuing Fiscal Year and the physical structures to be covered by such insurance.

Types of Insurance and
Structures Covered

Amounts of Insurance

N/A

N/A

8. If the adequacy of the above insurance was determined by a method other than by establishing the amounts and types of insurance adequate to cover the cost of replacing the maximum probable loss to the physical structures of the stormwater system, please list below the method used.

N/A

B. General Liability Insurance (Including Bodily Injury and Property Damage)

1. Policy Number 16N83040
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company The Travelers Indemnity Company
Address One Tower Square
Hartford, CT 06183

3. Description of amounts and types of insurance now in force:

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
General Liability	\$1,000,000 Each Occurrence \$3,000,000 General Aggregate
Personal & Advertising Injury	\$1,000,000
Damage to Premises Rented	\$100,000
Medical Payments	Excluded

4. The above insurance now in force is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained for the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

C. Workmen's Compensation and Employer's Liability Insurance

1. Policy Number KWC1321204
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company AmTrust Insurance Company
Address P.O. Box 655028
Dallas, TX 75251

3. Description of amounts and types of insurance now in force:

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
Workers Compensation &	\$1,000,000 Bodily Injury- Each Accident
Employers Liability	\$1,000,000 Bodily Injury by Disease- Each Employee
	\$1,000,000 Bodily Injury by Disease- Policy Limit

4. The above insurance is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained during the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

D. Other Risks Coverage Insurance Carried by the Authority in Addition to the Fire and Extended Coverage Insurance, General Liability Insurance, and Workmen's Compensation and Employer's Liability Insurance Listed Above

1. Policy Number 71N28111
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company Travelers Property Casualty Co of America
Address One Tower Square
Hartford, CT 06183

3. Description of amounts and types of insurance now in force (if none, write "None"):

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
Umbrella Liability	\$10,000,000 Each Occurrence \$10,000,000 General Aggregate

4. The above insurance is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained for the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

E. General Information

All the above insurance companies are responsible insurance companies, qualified to do business in the Commonwealth of Pennsylvania, and satisfactory to the Trustee for the Authority.

All the above insurance policies now in force (a) have been deposited with the said Trustee, (b) are non-assessable, (c) are for the benefit of the Bethlehem Township Municipal Authority and the Trustee for the Bethlehem Township Municipal Authority, according to their respective interests, and (d) provide that all money recovered under such policies shall be payable to and deposited with the Trustee.

The terms, conditions, coverages, and amounts of all the above insurance policies now in force are satisfactory to the Trustee.

The terms and conditions of all the above insurance policies now in force are satisfactory to the undersigned as being those normally provided as an insurance trade practice in adequately insuring stormwater systems and the operation thereof.

Additional information and comments, if any. (If none, please write "None").

None

Signed this 2nd day of January, 2024.

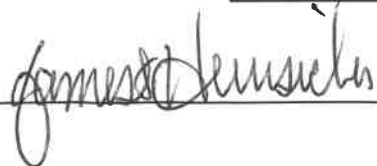
INSURANCE BROKER OF RECORD

Name: James L. Hunsicker, Robertson Insurance Group, LLC_

Address: 925 W. Broad Street, Suite 200_

Bethlehem, PA 18018_

Telephone No. 484-214-5314_



APPENDIX F



CONSULTING ENGINEERS' CERTIFICATE WITH RESPECT TO INSURANCE

In accordance with Section 8.07 within the Stormwater Facilities Lease Agreement (the "Agreement") dated as of December 20, 2021 established between Bethlehem Township, Northampton County, Pennsylvania (the "Township") and Bethlehem Township Municipal Authority ("Authority"), I, Strategic Management & Capital Solutions Group Practice Area Leader of Herbert, Rowland & Grubic, Inc., as the Consulting Engineer (the "Consulting Engineer") for the Township, hereby provide the Consulting Engineers' Certificate (the "Certificate") with respect to insurance, as required by the Agreement.

This Certificate is submitted in compliance with the terms outlined in the Agreement, which stipulates that the Township shall furnish the Authority with the Certificate on or before December 1 of each year, commencing from December 1, 2022.

The Certificate includes the following information and accompanying reports:

- I. **Insurable Value of Tangible Property:** The Certificate sets forth the aggregate insurable value of \$259,949,944 for the tangible property comprising the Stormwater System (as defined therein the Agreement), as determined by the Consulting Engineer. This value, outlined in Exhibit A, represents the estimated costs of in-kind replacement of all of the Stormwater System assets, as well as any other assumptions set forth in Exhibit A. Please note that the assumed assets are considered to be self-insured by the insurance broker. The aggregate assets are covered to an extent by the reserve fund established in the Agreement, which serves as a mechanism for addressing emergency events and ensures that funds are available for necessary repairs or replacements of the aggregate Stormwater System assets. It is assumed that the Authority will not need to replace all assets at the same time. The reserve fund currently totals \$250,000. Any costs over and above this would need to be funded through user rates. Monthly user rates for the average single-family residence are currently \$8.60.

- II. Report of Insurance: The Certificate includes a Report prepared by a competent insurance broker or agent detailing the amounts and types of insurance currently in force for the Stormwater System and its operation (the "Report") set forth in Exhibit B. This Report outlines the coverage provided by the existing insurance policies including general liability, personal and advertising injury, damage to premises rented and workers compensation and employers liability. Per Section I of this Certificate, the aggregate Stormwater System assets are self-insured, as is customary in normal trade practice for stormwater systems operations. This self-insurance practice is reiterated within the Report.
- III. Adequacy of Insurance: The Report also includes an opinion, as expressed by the insurance broker or agent, on whether the insurance currently in force is deemed adequate to cover potential risks and liabilities associated with the Stormwater System. This assessment considers the nature and extent of the Stormwater System, as well as relevant industry standards. We have relied on the Report of the insurance broker, in rendering our opinion.
- IV. Recommended Insurance for Ensuing Fiscal Year: Additionally, the Report provides recommendations on the amounts and types of insurance that should be maintained during the ensuing Fiscal Year. These recommendations are based on the expertise of the insurance broker and understanding of the potential risks and exposures associated with the Stormwater System. We have relied on the Report of the insurance broker, in rendering our opinion.

The Consulting Engineer assumes no risk or liability for the adequacy or effectiveness of the insurance coverage provided or that the aggregate assets of the Stormwater System are self-insured by the Authority. The Consulting Engineer solely assessed and provided a professional opinion regarding the insurable value and for aggregate Stormwater System assets based on industry standards.

The Township hereby covenants to maintain amounts and types of insurance that are satisfactory to the Consulting Engineer and, if different, the consulting engineers of the Authority.

IN WITNESS WHEREOF, I hereunto set my hand and affix my signature along with the Professional Engineer Seal this 2nd day of January 2024.

Herbert, Rowland & Grubic, Inc.

Adrienne M. Vicari

By: Adrienne M. Vicari, P.E.
Strategic Management & Capital Solutions Group
Practice Area Leader



Corporate Seal

EXHIBIT A

INSURABLE VALUE OF TANGIBLE PROPERTY

Please see the following page(s).

Bethlehem Township Municipal Authority

Stormwater System Valuation

Asset and Replacement Costs	SY	LF	Estimated		2023	Total
			Quantity	LS	Cost/Unit	Value
MOBILIZATION	--	--	--	1	10,127,910	\$10,127,910
MAINTENANCE AND PROTECTION OF TRAFFIC	--	--	--	1	6,751,940	\$6,751,940
INLET STRUCTURES	--	--	4,493	--	6,791	\$30,511,247
MANHOLE STRUCTURES	--	--	904	--	7,316	\$6,613,637
OUTFALL STRUCTURES	--	--	469	--	4,674	\$2,192,236
CLEANOUTS	--	--	36	--	467	\$16,827
OTHER SW ASSETS (OUTLET STRUCTURES)	--	--	732	--	6,127	\$4,484,789
OPEN CHANNEL SWALE	--	160,992	--	--	22	\$3,536,849
3" PERFORATED CORRUGATED POLYETHYLENE PIPE	--	109	--	--	43	\$4,733
4" PERFORATED CORRUGATED POLYETHYLENE PIPE	--	812	--	--	59	\$48,076
6" PERFORATED CORRUGATED POLYETHYLENE PIPE	--	1,826	--	--	91	\$165,773
8" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	2,328	--	--	93	\$217,634
10" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	1,168	--	--	104	\$121,323
12" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	9,247	--	--	114	\$1,056,563
14" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	110,480	--	--	125	\$13,771,041
15" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	11,939	--	--	130	\$1,550,172
16" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	9,945	--	--	135	\$1,342,920
18" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	109,503	--	--	145	\$15,924,138
20" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	421	--	--	156	\$65,596
24" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	84,064	--	--	197	\$16,590,731
30" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	21,732	--	--	229	\$4,966,201
36" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	47,830	--	--	260	\$12,420,591
40" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	1,363	--	--	291	\$396,420
42" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	3,057	--	--	312	\$952,618
48" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	27,557	--	--	364	\$10,018,480
60" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	1,713	--	--	779	\$1,334,506
66" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	53	--	--	1,039	\$55,053
72" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	296	--	--	1,298	\$384,329
75" SMOOTH LINED CORRUGATED POLYETHYLENE PIPE	--	62	--	--	1,662	\$103,042
UNIDENTIFIED PIPE (ASSUMING 18" DIAMETER)	--	55,190	--	--	145	\$8,025,836
2A SUBBASE, 6" DEPTH	341,787	--	--	--	22	\$7,412,904
BASE REPAIR SUPERPAVE ASPHALT MIXTURE DESIGN, BASE	341,787	--	--	--	54	\$18,567,762
SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG	341,787	--	--	--	17	\$5,946,654
Aggregate Stormwater System Asset Sub-Total:						\$185,678,531
CONTINGENCY COSTS			20%		\$37,135,706	
RELATED PROJECT COSTS			20%		\$37,135,706	
Aggregate Stormwater System Asset Total:						\$259,949,944

Notes and Assumptions:

Subject to change.

Assumes replacement of all current assets.

Assumes all current assets are approximately 30 years old, as this is estimated to be the average age of stormwater tangible assets within the Township.

EXHIBIT B

REPORT OF INSURANCE

Please see the following page(s).

CERTIFICATE
OF
INSURANCE BROKER OF RECORD
FOR
BETHLEHEM TOWNSHIP MUNICIPAL AUTHORITY

The undersigned Insurance Broker of Record hereby certifies the following insurance information concerning the Bethlehem Township Municipal Authority Stormwater System and the operation thereof:

A. PROPERTY INSURANCE- None (See 4 and 5 below)

1. Policy Number N/A
Effective Date N/A
Expiration Date N/A
2. Name of Insurance Company N/A
Address N/A
3. Perils Covered N/A
4. Description of the amounts and types of insurance now in force and the physical structures covered by such insurance:

<u>Types of Insurance and Structures Covered</u>	<u>Amounts of Insurance</u>
The below-ground property constituting a portion of the stormwater system, is not insurable, and property damage insurance is not generally provided, as a trade practice, in the operation of stormwater systems.	\$0

5. There are no physical structures constituting parts of the stormwater system upon which property damage insurance is normally carried, as a trade practice, in the operation of stormwater systems.
6. The insurance now in force is X is not adequate for the ensuing Fiscal Year, subject to the limitations set forth in paragraphs 4 and 5.
7. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained during the ensuing Fiscal Year and the physical structures to be covered by such insurance.

Types of Insurance and
Structures Covered

Amounts of Insurance

N/A

N/A

8. If the adequacy of the above insurance was determined by a method other than by establishing the amounts and types of insurance adequate to cover the cost of replacing the maximum probable loss to the physical structures of the stormwater system, please list below the method used.

N/A

B. General Liability Insurance (Including Bodily Injury and Property Damage)

1. Policy Number 16N83040
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company The Travelers Indemnity Company
Address One Tower Square
Hartford, CT 06183

3. Description of amounts and types of insurance now in force:

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
General Liability	\$1,000,000 Each Occurrence \$3,000,000 General Aggregate
Personal & Advertising Injury	\$1,000,000
Damage to Premises Rented	\$100,000
Medical Payments	Excluded

4. The above insurance now in force is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained for the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

C. Workmen's Compensation and Employer's Liability Insurance

1. Policy Number KWC1321204
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company AmTrust Insurance Company
Address P.O. Box 655028
Dallas, TX 75251

3. Description of amounts and types of insurance now in force:

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
Workers Compensation &	\$1,000,000 Bodily Injury- Each Accident
Employers Liability	\$1,000,000 Bodily Injury by Disease- Each Employee
	\$1,000,000 Bodily Injury by Disease- Policy Limit

4. The above insurance is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained during the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

D. Other Risks Coverage Insurance Carried by the Authority in Addition to the Fire and Extended Coverage Insurance, General Liability Insurance, and Workmen's Compensation and Employer's Liability Insurance Listed Above

1. Policy Number 71N28111
Effective Date 6/1/2023
Expiration Date 6/1/2024

2. Name of Insurance Company Travelers Property Casualty Co of America
Address One Tower Square
Hartford, CT 06183

3. Description of amounts and types of insurance now in force (if none, write "None"):

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
Umbrella Liability	\$10,000,000 Each Occurrence \$10,000,000 General Aggregate

4. The above insurance is X is not _____ adequate for the ensuing Fiscal Year.

5. If the insurance as described above is not adequate, please list below the amounts and types of insurance that should be maintained for the ensuing Fiscal Year.

<u>Types of Insurance</u>	<u>Amounts of Insurance</u>
N/A	

E. General Information

All the above insurance companies are responsible insurance companies, qualified to do business in the Commonwealth of Pennsylvania, and satisfactory to the Trustee for the Authority.

All the above insurance policies now in force (a) have been deposited with the said Trustee, (b) are non-assessable, (c) are for the benefit of the Bethlehem Township Municipal Authority and the Trustee for the Bethlehem Township Municipal Authority, according to their respective interests, and (d) provide that all money recovered under such policies shall be payable to and deposited with the Trustee.

The terms, conditions, coverages, and amounts of all the above insurance policies now in force are satisfactory to the Trustee.

The terms and conditions of all the above insurance policies now in force are satisfactory to the undersigned as being those normally provided as an insurance trade practice in adequately insuring stormwater systems and the operation thereof.

Additional information and comments, if any. (If none, please write "None").

None

Signed this 2nd day of January, 2024.

INSURANCE BROKER OF RECORD

Name: James L. Hunsicker, Robertson Insurance Group, LLC_

Address: 925 W. Broad Street, Suite 200_

Bethlehem, PA 18018_

Telephone No. 484-214-5314_

